THIRD SERIES VOL 59 NUMBER 11 SEPTEMBER 1952

Arch

66 PORTLAND PLACE LONDON W1 · TWO SHILLINGS AND SIXPENCE

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The lantern of Ely Cathedral. From a photograph by Herbert Felton, F.R.P.S.

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THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

THIRD SERIES VOL 59 NUMBER 11 : : SEPTEMBER 1952 : : TWO SHILLINGS & SIXPENCE
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The 1952-53 Session

On 4 November the President, Mr. Howard Robertson, will open the 1952-53 Session of the Royal Institute by delivering his Inaugural Address and unveiling the portrait of his predecessor, Mr. A. Graham Henderson, which has been painted by Mr. W. O. Hutchison, President of the Royal Scottish Academy. The programme of sessional papers and lectures which are to follow during the winter promises to be no less attractive and interesting to members than those in past years. The tercentenary of *Inigo Jones* is marked by a paper on him by Professor Rudolf Wittkower. Peter Shepheard [*A*] is to discuss the evergreen problem of *Landscape and Architecture*. Mr. Osbert Lancaster [*Hon. A*], scholar and cartoonist, is to talk about the subject of preservation under the title *The Future of the Past*, and in June next year Professor Henry Russell Hitchcock, the celebrated American scholar, is to read a paper on *The Architecture of Sullivan*—father of the steel-framed skyscraper and teacher (if such a term is really applicable) of Frank Lloyd Wright.

The science lectures begin with one on that most modern of subjects, *Pre-stressed Concrete*, by Mr. O. J. Masterman, and continue with *The Modern American Factory* by Mr. W. A. Allen [*A*]. Mr. Allen, who has recently made a study of his subject in the United States, has some startling new developments to report. The criticism of students' designs is to be given by Mr. Howard V. Lobb [*F*], who is also later on to lecture on *Successes and Failures of New Techniques*. In April, Dr. Roland Woods, who has a lifetime's experience of his subject, is to read a paper on *Building Legislation—A Help or Hindrance*.

R.I.B.A. Kalendar

Members will shortly be receiving the 1952-53 issue of the *Kalendar* and will see that Fellows, Associates and Licentiates have all been included in one alphabetical list, with the class of membership indicated against each name. It is felt that this arrangement will greatly facilitate the use of the *Kalendar* when membership details or addresses have to be looked up.

It will be appreciated that this has involved a complete resetting of the *Kalendar*, and it is inevitable that however much care is given to the checking, a certain number of mistakes may occur. Members and Students are therefore asked to look at their own entries and notify the Secretary, R.I.B.A., if any correction should be made. The new *Kalendar* does not, of course, show changes of address sent in after 31 May—or, for overseas members, 30 June.

Forthcoming Exhibitions at the Royal Institute

The Royal Institute is planning to mark centenaries of two architects which occur this year. On 18 November, Mrs. Phoebe Stanton is to read a paper to an open meeting of the Library Group on Augustus Welby Pugin, who died one hundred years ago this month. At the same time a small exhibition will be held for about ten days consisting of sketches and books by Pugin mainly drawn from the collection of Mrs. F. Mackey, which has been on loan to the R.I.B.A. Library since the war. The meeting of the Library Group will be open to all members of the Institute.

The tercentenary of Inigo Jones will be marked by Professor Wittkower's sessional paper on 9 December and by an exhibition partly drawn from the Institute's own collection and partly from the Chatsworth collection and other sources. The material for this exhibition is now being assembled with the advice of Professor Geoffrey Webb [*Hon. A*] and Dr. Margaret Whinney, whose article on Inigo Jones was published in the June JOURNAL.

Before either of these exhibitions is held it is hoped to show a small exhibition of Irish architecture prepared by the Cultural Relations Committee of the Department of External Affairs for Ireland. The main work of selection and preparation was undertaken by the Royal Institute of the Architects of Ireland, and the exhibition contains examples of both historical and contemporary work: it is at present touring on the Continent but is expected to be on view at the R.I.B.A. from 14 October to the end of the month.

Early in the New Year an exhibition of Dutch architecture is to be held—the first to be shown at the R.I.B.A. The exhibition will illustrate the Dutch way of life as typified by its buildings and will show how the Dutch people have tackled the particular building problems they have had to face since the war. It is understood that part of the exhibition will be devoted to illustrating the new towns and villages being built in the North East Polder and the replanning of towns such as Rotterdam. An article on the North East Polder appeared in the JOURNAL of October 1949.

In April an exhibition of mural painting is to be shown, sponsored by the Society of Mural Painters. The purpose of this exhibition is to demonstrate how mural painting can be used to enhance and enrich contemporary buildings, and each mural will be displayed in an appropriate architectural setting. The murals are being specially painted for the purpose by well-known artists.

R.I.B.A. Travelling Exhibitions

During 1953 there will be no major exhibition at the R.I.B.A. covering, as in past years, some field of work by British architects. The reason is that for some time the Public Relations Committee have felt that more should be done to make architectural exhibitions available in the provinces. In particular they wish to stimulate interest in the work of the architect among those sections of the public who do not have so much opportunity as the London public of seeing architectural exhibitions. The Public Relations Committee therefore hope that the exhibitions which they propose to prepare will be shown in such places as libraries, art galleries, town halls, schools, stores and other places where a 'ready made' audience exists, and they look to the Allied Societies, Chapters and Branches to collaborate in making arrangements for the showing of these exhibitions in the same way as was done for the 'Housing Needs of Old People' exhibition which has had such a successful tour in the Provinces.

The first of these travelling exhibitions, which will be ready early in the New Year, will deal with housing, particularly the problems of siting, layout and neighbourhood planning, the object being to demonstrate to the 'man in the street' the advantages to be gained by employing architects on this work. The second exhibition, which will be designed as soon as the first is ready for touring, will deal more particularly with the small house which is built to client's requirements.

The exhibitions will be toured on stands, specially made for the purpose, on which the screens will be ready mounted. The setting up of the exhibitions therefore will be a simple matter; moreover, the stands have been designed so that they can be adapted to suit various shapes and sizes of exhibition space. Full details will be sent out shortly to all Allied Societies, Branches and Chapters.

Cultural Identity Cards

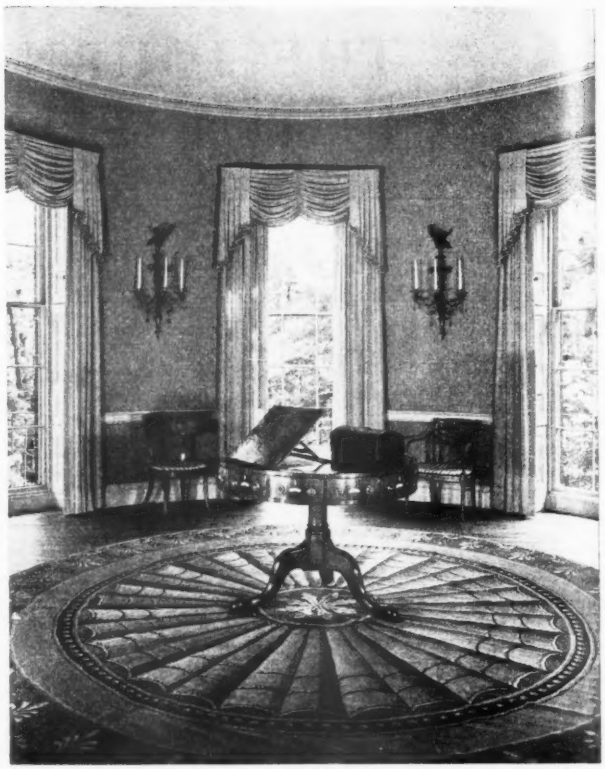
The Cultural Identity Card Scheme, whereby substantial privileges are granted to students and research workers travelling in certain European countries, has recently been extended to include Italy, Norway, the Saar, Sweden and Turkey. Hitherto the scheme has been limited to Great Britain, France and the Benelux countries.

The facilities offered to holders of the card include reduced fees for entry to museums, art galleries, concerts and theatres; access to libraries and archives not open to the public; attendance at university courses and scientific institutes; and admission to students' restaurants and help in obtaining accommodation.

Cultural Identity Cards are issued to the architectural profession by the R.I.B.A. Applicants should either be Students travelling abroad to obtain information for their thesis or be in receipt of a travelling scholarship or bursary.

Rural Craftsmen

The Trustees of the Rural Industries Bureau have issued their report from April 1950 to March 1952, for which the Rt. Hon. Viscount Hampden, Chairman of Trustees, has written a foreword. The Bureau carries on its work so quietly and unobtrusively that many persons will be surprised to learn that it is in touch with some 13,000 country businesses employing 34,000 people and having a gross output of £30,000,000 a year. The Bureau assists rural industries by advice and training, including those of hand-made bricks, thatching and wrought ironwork; crafts that will surely appeal to architects, especially those who feel that there is something in the work of individual craftsmen that is lacking in the soulless precision of prefabrication. That rural industries have not been entirely crushed by mechanisation may be inferred from Viscount Hampden's words: 'But most significant of all is the fact that there are still many thousands of craftsmen in our villages and market towns, who in their small workshops and by their own skill can make a reasonably good livelihood and enjoy their individual way of life.'



The circular room in the Octagon, Washington, the headquarters of the American Institute of Architects. The photograph shows the pair of girandoles presented to the A.I.A. by the R.I.B.A.

Summer Visitors and Travel

The summer months brought to the R.I.B.A. a steady stream of visitors in quest of architectural and other information. Whilst many came from abroad to see something of Britain's post-war architectural achievements, scarcely less numerous was the number of British students eager to obtain, before setting out for the continent, letters of introduction to foreign architects, cultural identity cards, R.I.B.A. travelling cards, lists of buildings to see during their holiday, and so on.

The largest number of overseas visitors came from Australia. Americans and Italians were the next most frequent callers. The Hertfordshire schools, the New Towns (especially Harlow), modern blocks of flats—these were the schemes which attracted the majority. More exacting in his demands was the Australian architect who wanted information on the latest developments in the design and lay-out of sweet factories and dry cleaning establishments!

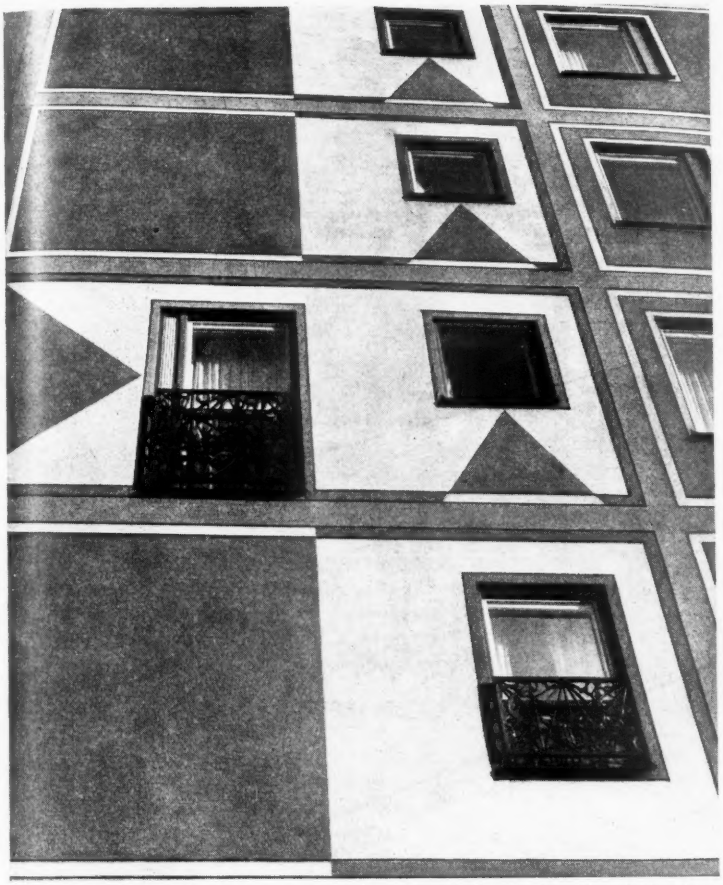
A.B.S. Christmas Cards

Last year's successful venture of the Architects' Benevolent Society in selling Christmas cards to help their funds is to be repeated this year. Full particulars are given on page 416 of this JOURNAL.

Canteen

Members are reminded that the canteen situated on the second floor is available for their use as well as that of the staff. Students, but not Probationers, are also entitled to use it. Lunch can be obtained from 12 noon-2 p.m. at a price of 3*s*. per head, and members and Students can also entertain guests.

In addition coffee and biscuits can be provided in the Members' Room during the morning, and afternoon tea from 3.30 p.m.-5 p.m.



Detail of the façade, showing patterned coloured renderings and cast iron balconies

The Hotel Malmen, Stockholm

Architect: Georg Varhelyi

IN 1944 THE CITY COUNCIL OF STOCKHOLM set up a committee to consider the building of a new hotel. Following the acceptance of the committee's report by the city council, H.S.B.—the national house-building corporation—joined the project and a limited profit company was formed by the city council in collaboration with H.S.B. to build and manage the hotel.

The preliminary technical research was undertaken by Sven Wallander, Chief Architect of H.S.B., and Georg Varhelyi was appointed to design the building. Work was started at the end of 1948, and the building is now practically completed. Its final cost will be about 7.5 million Swedish crowns (£520,000), to which must be added 1.2 million Swedish crowns (£80,000) for furniture, loose fittings and machines. The hotel contains 288 bedrooms and 450 beds; it adds 170,000 'guest-nights' a year to Stockholm's hotel capacity.

The structural engineering work was designed by the construction office of H.S.B., the chief engineer being Lennart Bogestedt. Gunnar Heimburger (architect) and J. H. Sager (civil engineer) were consultants for sound insulation and acoustics. The furniture and fittings were designed by Carl-Axel Acking (architect), kitchen equipment by Seth Torné (architect) and the electrical installation by Gösta Sjölander (engineer).

Planning. The building has eleven and a half storeys, of which three and a half are below ground level. The ground floor contains the restaurant, breakfast room and kitchen, together with the hotel reception and the usual facilities such as kiosks, telephone boxes, sweet shop and bank. A stair will give direct access to the new underground railway when it is finished.

The first basement houses the rooms for private functions. The Malmen Lounge is a banqueting hall with dance floor and cinema projection suite and a small stage; it holds 350 persons. There are several private dining rooms and lounges for small parties. Altogether 600 guests can be accommodated at functions in this basement suite of rooms. The sub-basements house the central stores, staff changing rooms, central radio and clock equipment, the air-conditioning plant and, in the lowest half sub-basement, the heating plant.

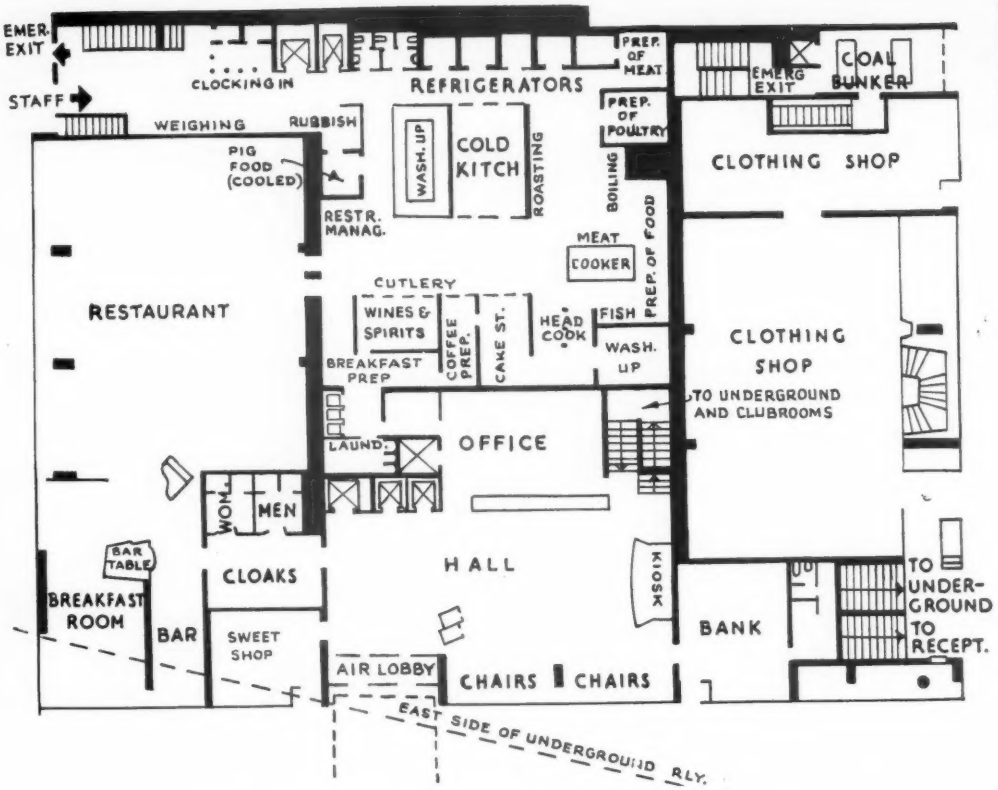
There are six storeys of bedrooms, all more or less identical and containing five types of bedroom or suite. The seventh storey houses the hotel offices and some lettable offices.

The Bedrooms. Of the 288 bedrooms, 137 have separate bathrooms, 48 have shower rooms and every room has a w.c. and basin. There are 24 suites. The old hotel problem of the proportion between single and double bedrooms has been overcome by planning 158 of the rooms so that they can be used either by one or by two persons (Types B and C on page 393 and photographs on page 394). These rooms have an ordinary bed and a reversible sofa, beneath which is a second bed. A fitting in all rooms is designed to serve the dual purpose of a writing desk and dressing table. The luggage shelf is provided with drawers beneath. Clothes-hanging space is provided in the lobby to each bedroom.

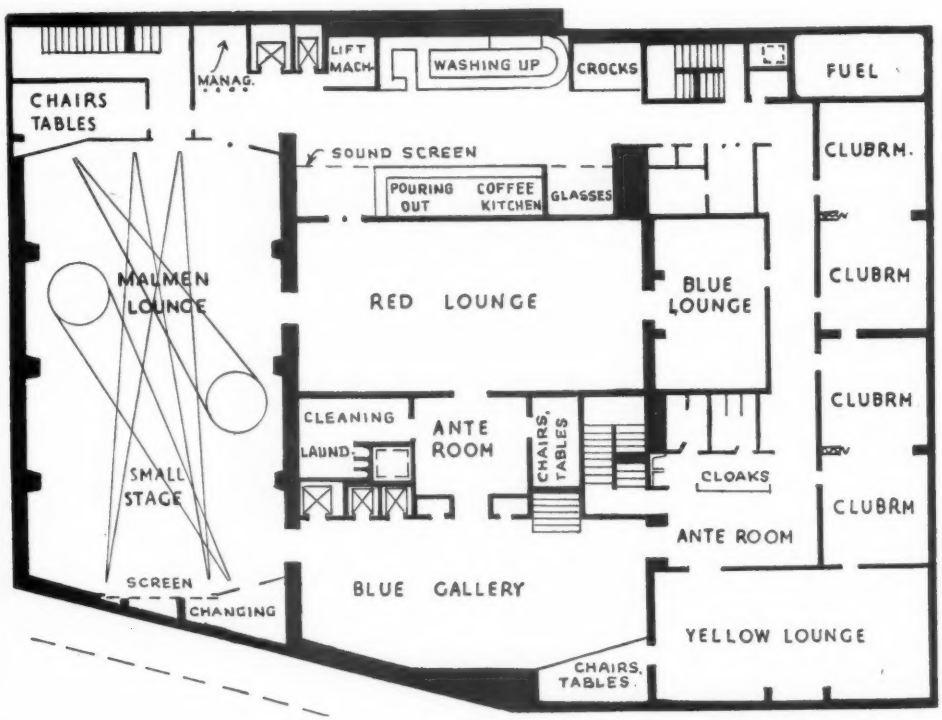
Special attention has been given to the saving of staff labour. For instance, the furniture of the normal hotel double room has between 44 and 48 legs around which the floor must be cleaned. Much of the furniture has been attached to the walls, so that in the rooms with two beds there are only 13 legs.

All rooms have built-in radio, giving four services. One of these is the Swedish service, two are foreign services, and one relays the hotel's own musical entertain-

(*continued on page 395*)



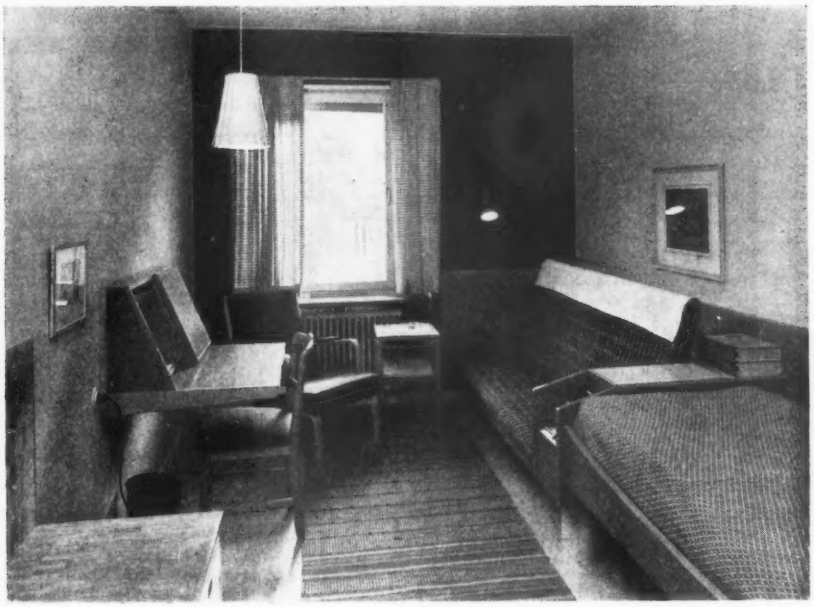
Ground floor plan. The main kitchen is a single storey top lit. The reception hall contains the usual services not all of which are shown on plan, together with access to sweet shop and bank



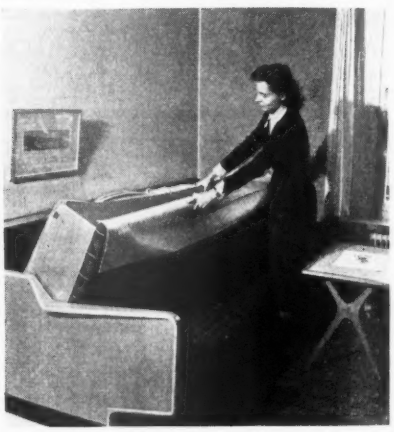
The first basement houses the rooms for private functions and will accommodate 600 guests. The plan allows great variety in grouping of rooms for individual functions. The Malmen Lounge is equipped for dinners, dancing, cabaret or cinema shows

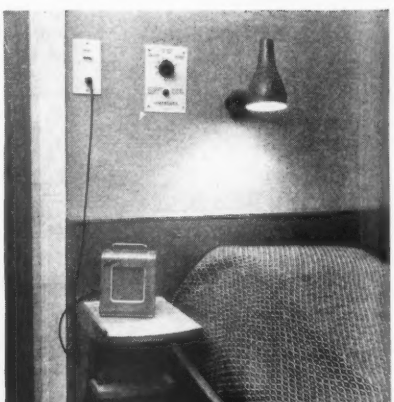
Plan of one of the six identical bedroom floors showing the distribution of the various types of room (see detail plans below), the positions of the service rooms, etc. A separate bath and massage room is provided as is usual in Swedish hotels

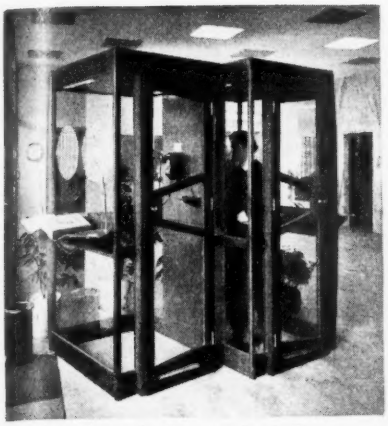
Plans of the six types of bedroom and suite. Type A, the smallest, has a w.c. and basin, and lets at 12.5 Swedish crowns (about 17*s.*) a night. Types B and C are single-double rooms, i.e. with a sofa which is convertible to a second bed; type B has a bath and type C a shower. Type D can be either a suite of sitting room and single bedroom with bathroom or two interconnecting bedrooms. Type E is a suite with two somewhat similar plans. Both have one double and one single room, as well as a sitting room, but vary in the bathroom and lavatory arrangements



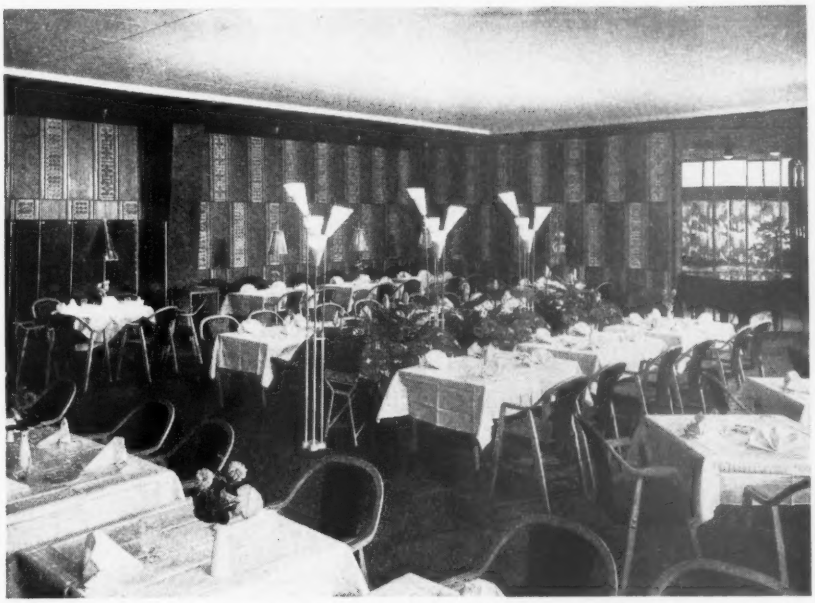
Top left: a type B single-double bedroom. Below: the sofa being turned over to form the second bed. Above: the built-in push-button radio and telephone. Bottom right: bedside fittings, including the chambermaid's portable loudspeaker and the calling alarm. Below, left: the white tiled and stainless steel kitchen, with glass brick roof and fluorescent lighting



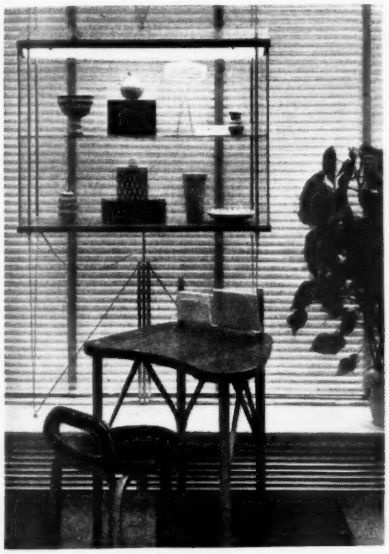




Telephone boxes in the reception hall



The main dining room has walls of teak and glass-fibre hand woven textiles



Writing desk and suspended showcase in the lounge

A corner of the lounge

ment. A telephone system replaces the old-fashioned call bells and light signals. Each bedroom is fitted with an automatic calling alarm, which the guest can set and which, when it sounds, also lights a lamp in the floor service room so that the staff know the guest is awake. There are two clocks in every corridor.

The decoration of the bedrooms was the subject of experiment with full-size mock-up rooms. It was discovered that by painting the end walls in dark colours and giving the carpets stripes across the shorter dimension, the rooms could be made to appear wider and shorter than they are. The windows have light-proof venetian blinds as well as curtains.

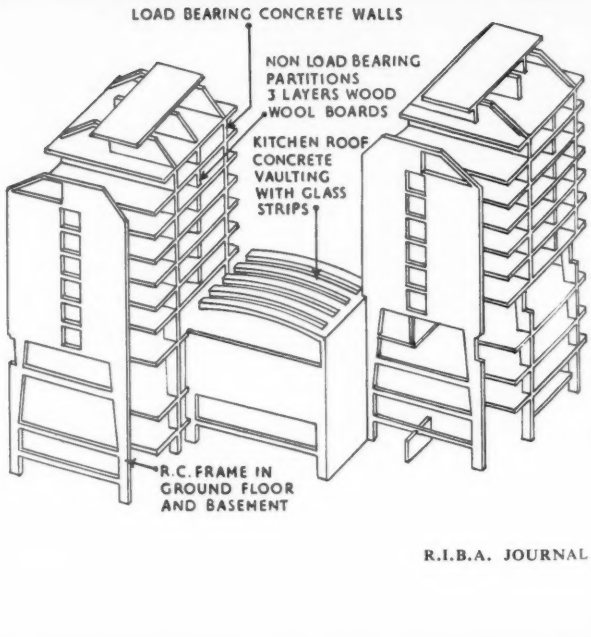
Construction and Equipment. The framework of the building is of reinforced concrete. The external wall panels are of insulating concrete (Y-tong) slabs surfaced with coloured renderings. Great attention was paid to sound insulation and acoustics.

The kitchen department has a floor area of 3,550 sq. ft. It is planned to serve up to 600 guests at functions in the basement rooms, 225 in the dining room, and 160 in other rooms and to provide meals for the staff. Two freight lifts connect it to a sub-basement, where are deep freeze refrigerators. The roof over the kitchen is a single span of 65 ft. in reinforced concrete and glass bricks. The equipment includes gas-fired ranges, electric grills, steam boilers, mechanical dish-washing plant and automatic coffee machine, the last delivering 16.5 gallons per hour. A variety of mechanical labour-saving devices is provided; for example, electrically driven service trolleys are used for moving dishes about and can be driven into the various dining rooms for setting tables; each trolley can take 20 dozen plates, or a weight of 275 lb. Stools are provided for the kitchen staff; these are fixed to the work tables and can be unclamped for use.

The hotel has ten lifts, three of which are passenger lifts, with a collective operation system which automatically brings the most convenient lift to the caller. Three food lifts serve the bedrooms.

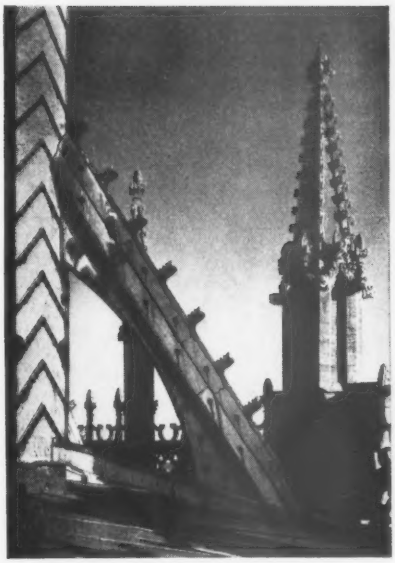
Left: the Malmen Lounge. Above: the bar

Above: a wooden pierced screen in teak in the restaurant. Right: one of the smaller club rooms. Many of Sweden's leading modern architects, designers and decorators were employed throughout the building. Bottom right: diagram of the r.c. structure


LOAD BEARING CONCRETE WALLS
NON LOAD BEARING PARTITIONS 3 LAYERS WOOD WOOL BOARDS
KITCHEN ROOF CONCRETE VAULTING WITH GLASS STRIPS
R.C. FRAME IN GROUND FLOOR AND BASEMENT

The 24 air-conditioning plants deliver 3,500,000 cu. ft. of air per hour. The air is heated, filtered and washed, and certain rooms can be cooled. The plants supply all the basements and public rooms. Serving the bedroom floors is an extract fan system exhausting up the pipe ducts from the bathrooms and w.c.s to the roof. Fresh air is admitted to the bedrooms either through controllable ventilation openings above the radiators or directly through opening lights at the side of the main windows. An unusual feature in the dining rooms is a separate system for clearing the air of smoke; this is additional to the normal ventilation. If a room becomes excessively smoky, turning a switch starts this separate system blowing in large quantities of air; after a time it switches itself off.

The heating plant consists of three boilers; at present these are oil fired, but the plant is so planned that a change to solid fuel can be made quickly. The bedroom floors are kept at a constant temperature by thermostats, which operate mixing valves on the circulation system. The heating plant will also supply warmth to the adjacent underground station.



The Lantern of Ely Cathedral

Restoration of the damage done by death-watch beetle

Consulting Architect: S. E. Dykes Bower, M.A., F.S.A. [*F*]

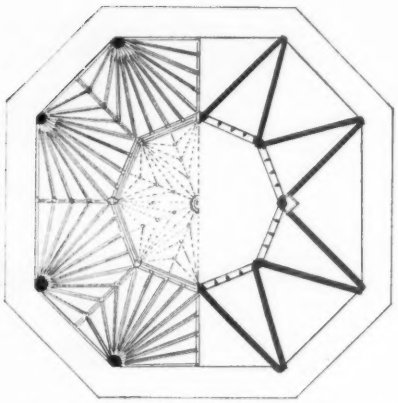
Above left: interior view showing the main vaulting carrying the lantern. The lantern begins at 93 ft. above the floor
Above right: exterior view of a flying strut reinstated by Scott and covered with lead

IN THE YEAR A.D. 1080 Simeon was Abbot of the Benedictine monastery at Ely, and he set about building a cathedral on the site of the religious house founded in 673 by Etheldreda, princess of East Anglia. The cathedral had a Norman tower over the crossing of nave, choir and transepts. By the year 1322, when John de Crauden was prior and Alan of Walsingham sub-prior and sacrist, cracks had appeared in the rubble-filled walls and piers supporting the tower. Nothing seems to have been done in the way of strengthening the work although, probably as a precaution, the monks for some time past had been conducting their devotions in a chapel instead of in the choir.

The condition of the tower must have caused anxiety to Alan since he, as sacrist, was responsible for the fabric, but his mind was filled with projects for the enlargement of the cathedral, including the building of a Lady Chapel; indeed, the foundations of the chapel had been laid when on 12 February 1322 the Norman tower fell with such a noise 'that it was thought an earthquake had taken place', and in its fall the tower not only destroyed its supporting piers but also brought down the adjoining bays, and the whole of the crossing was exposed to the sky. 'Sacrist Alan, grieving vehemently and overcome with sorrow at an event so disastrous and lamentable, for a moment knew not which way to turn himself, or what to do for the reparation of such a ruin. But taking courage, and putting his whole trust in the help of God and His most Holy Mother Mary, and also in the merits of the Holy Virgin Etheldreda, set his hand to the work.'

It can be imagined that Alan, while gazing sorrowfully at the havoc, was struck with the effect of the great access of light coming in at the crossing and he may have thought how splendid it would be if, in rebuilding the tower, he could preserve something of that effect. He therefore made a bold decision; instead of rebuilding the old supporting piers and erecting a tower in the normal way he would clear away the remains of the piers and use the adjoining ones to support a lantern that should allow as much light as possible to enter at the crossing. He therefore strengthened the eight nearest piers in the transepts, choir and nave, and on them erected tall arches facing east, west, north and south. Across the corners he built lesser arches with great windows above them. Thus he produced an octagon on plan, with four long sides facing the choir, nave and transepts, and four shorter sides giving access to the aisles.

But how was this octagon to be roofed? The span was some 66 ft., and in those days it would have presented a major problem if it was to be vaulted in stone, and it could not well be covered with a flat timber ceiling, for timbers that length would hardly be safe even if they could be obtained. So Alan decided to construct an



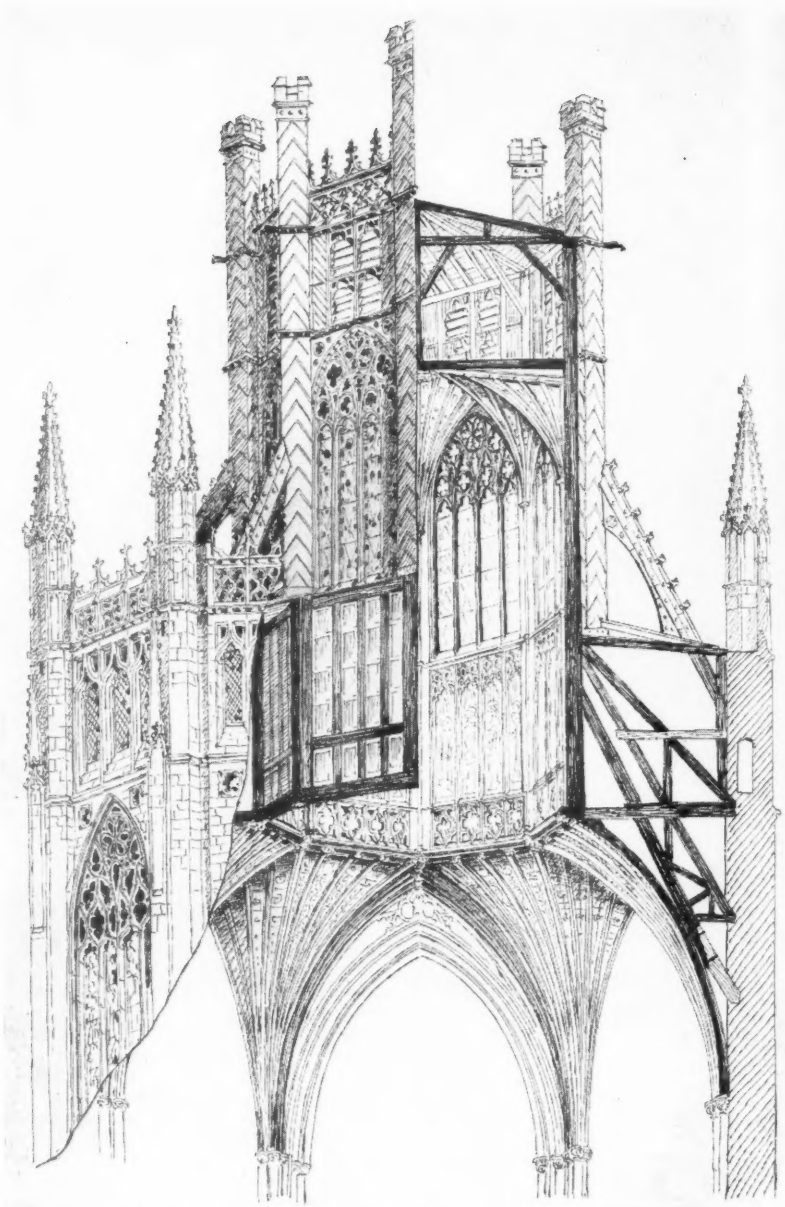
Part plans of octagon and lantern, and strutting

oak lantern, to be supported by timber ribs converging on the capitals of the stone piers he had strengthened. He fanned out these ribs to carry an octagonal collar some 31 ft. in the clear, and on it he erected eight great oak posts, 63 ft. long and of 3 ft. 4 in. by 2 ft. 8 in. girth. The lower part of the lantern he filled in with wood panels with windows over, and he ceiled it with vaulting ribs springing from the great posts and rising to a central boss, for carving which John of Burwell was paid 2*s*. 'and his keep at the prior's table.' Above the level of the boss the great posts rise to carry the roofing of a chamber over the vaulting, and here originally bells were hung.

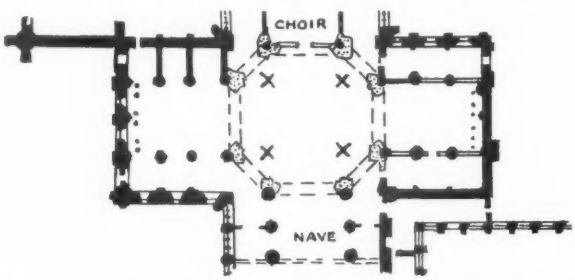
The problem, however, was to steady these 63 ft. long posts. It was solved by erecting a star-shaped system of sixteen struts in pairs, each pair meeting two posts at about a third of their height and converging on buttresses at the angles of the octagon below. This star-shaped system of strutting changed the orientation of the lantern so that an angle, and not a side, lay over each side of the octagon formed by the piers rising from the floor of the cathedral. In addition timber flying struts were erected from the centres of the eight flat sides of the stone octagon to join the posts some two-thirds up their height.

Although Alan of Walsingham is credited with the inception of this octagonal lantern —an innovation in English ecclesiastical architecture—it is probable that Master William Hurley was partly responsible for the design, and certainly for the execution of the work, which he carried out in a manner worthy of a master craftsman and of one who afterwards became the King's head carpenter.

From the point of view of design and construction there is no reason to doubt that the lantern would have remained to this day as strong and efficient as when Master William left it, but unfortunately the death-watch beetle came to destroy, and in 1847 George Gilbert Scott (he was not then knighted) was called in to advise on remedial measures. He found that the feet of the main struts had been badly eaten away where they converged on the



Mr. W. F. Haslop's drawing of the lantern. The eight posts are each 63 ft. long

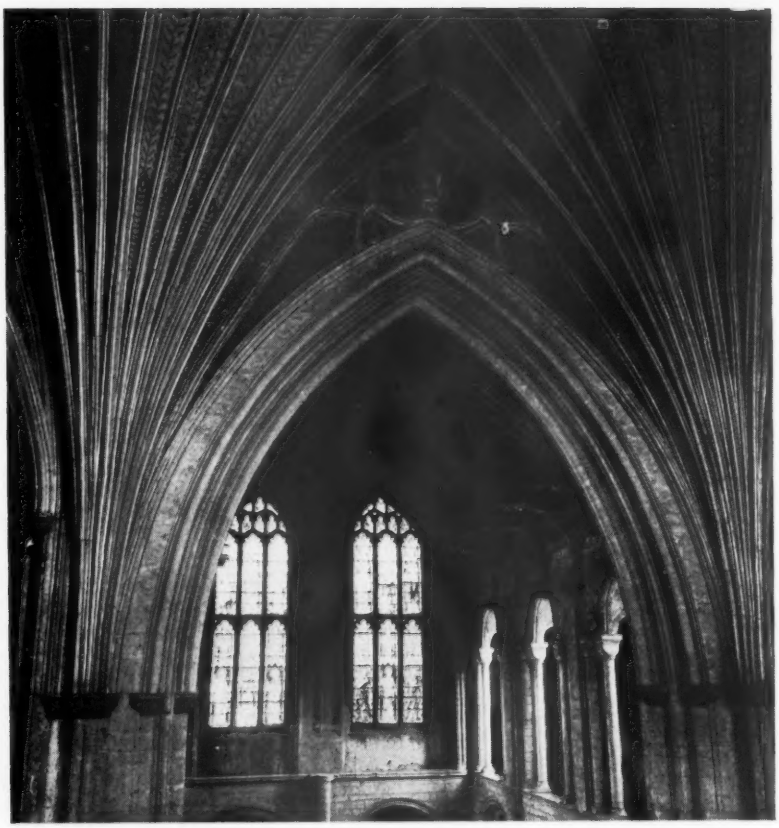


Plan of the octagon, showing the strengthened piers. The positions of the Norman piers removed are shown at X

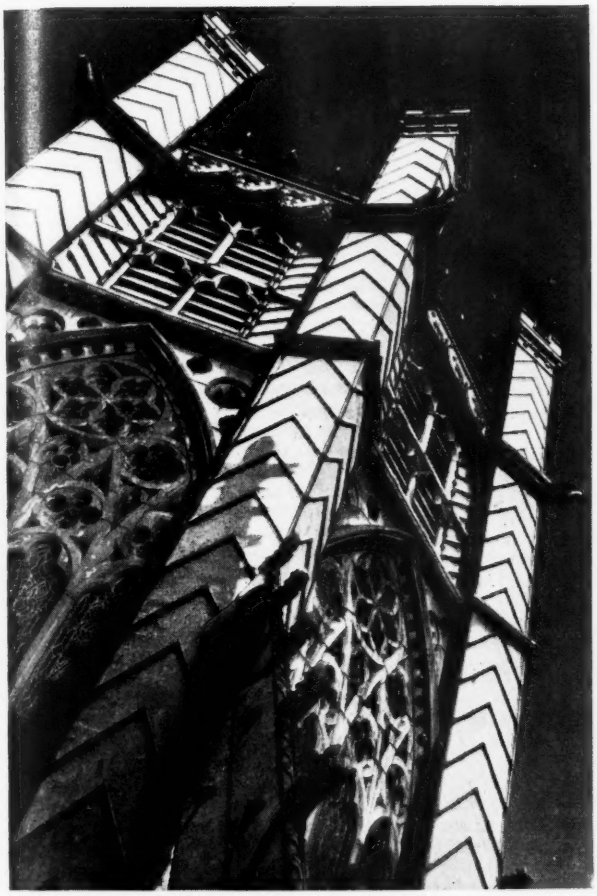
Above left: the upper part of the eastern main post, one of the vital supports of the structure. Above right: the top of the same post

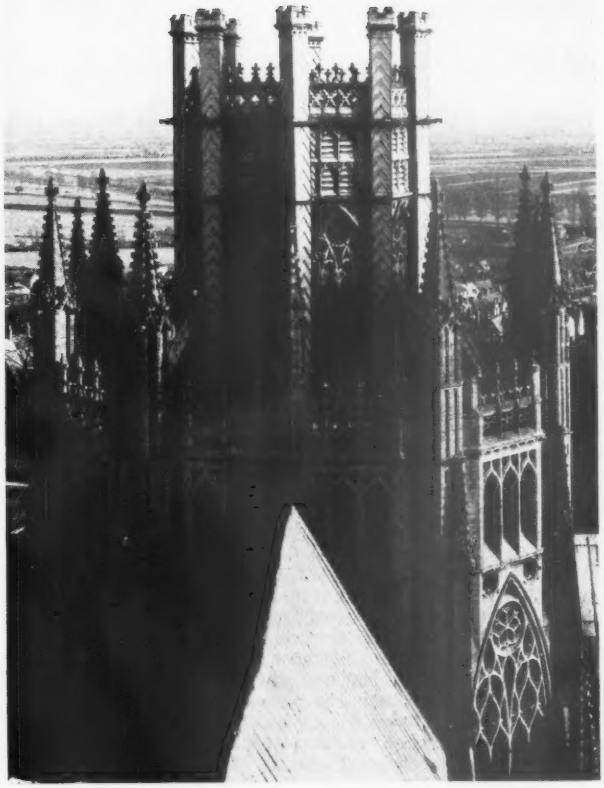
Right: one of the eight springings of the main vault, showing beetle holes coming through the surface which was painted a hundred years ago

Above left: general view of the trusses to the lantern, showing the panels which have been hinged for future access to the paintings
Above right: one of the main vault ribs, showing how the beetle has eaten right down to the painted boarded web



Left: view of the north transept, showing two of the springings of the main vault





Left: exterior view of the lantern and, right, of the octagon and lantern

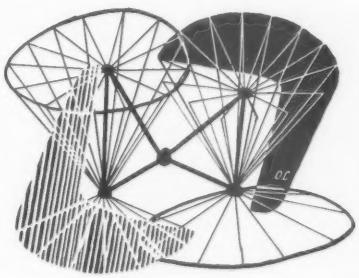
buttresses, so he added sprockets and bound them to the original struts with iron bands. But the beetle has now eaten its way between the sprockets and the struts, and so the binding action of the bands is weakened. Scott introduced additional bracing, and he also reinstated the flying struts that had been taken away by an earlier restorer. These he covered with lead where they passed into the open above the roofing over the strutting systems, elaborating the leadwork with crockets.

It is suspected that when the work of repair was put in hand 100 years ago the affected parts of the timbers were not cut away sufficiently deeply to eradicate the beetle, and that only a surface dressing was applied which did not prevent the beetle from continuing its destructive work, and it has now become necessary to carry out further repairs. This is being done by Messrs. Rattee and Kett of Cambridge, a firm whose founders carried out the work ordered by Scott. Mr. S. E. Dykes Bower, F.S.A. [*F*], is the consulting architect.

Recently the JOURNAL was given the opportunity of inspecting the lantern under the expert guidance of Mr. W. F. Haslop, F.R.S.A., of Messrs. Rattee and Kett, who is in charge of the work and whose drawings of the lantern are reproduced here. This inspection revealed how widespread is the damage done by the beetle; some portions of the timber are riddled with holes while others are eaten away for a considerable portion of their depth, as will be apparent from an examination of the accompanying photographs, which were taken by Mr. Edward Leigh, F.I.B.P., F.R.P.S., of Cambridge. Several of the timber ribs of the lower vaulting have been eaten right through where they converge on the stone capitals of the supporting piers; the top of the eastern great post has practically gone and the other seven have been affected, but luckily not seriously enough to impair their strength. Other parts of the cathedral have been damaged by death-watch and other beetles, and an appeal has been launched for funds to carry out the work of restoration and repair, of which some has already been put in hand as a matter of urgency.

Mr. Haslop explained that in repairing the lantern the procedure will be to cut away the surface wood where it has ceased to have any functional value and then to inject insecticide into each beetle hole; afterwards the holes will be filled with bright-coloured wax so that any future activity may be detected. Replacement of defective timbers will, of course, be made where the strength of the original work has been seriously weakened. It has been necessary to lift portions of the leadwork of the roof to inspect the covered work, but it is not anticipated that the whole of the leadwork will need renewal. To facilitate renovation of the paintings on the panels of the lower part of the lantern they have been hinged.

When all this work has been completed it is to be hoped that this 600-year-old lantern will remain for many years to come as a witness to the skill and ingenuity of Alan of Walsingham and Master William Hurley.



House Heating and the Tenant

Experiments at Abbots Langley

By Rosslyn Green, M.A., and Elisabeth A. Milroy

DURING THE SPRING of 1947 ten pairs of semi-detached houses were built for the Building Research Station on an undeveloped site near the village of Abbots Langley, Hertfordshire, and a year later a terrace of four houses was added. In initiating this project the Station had particularly in mind a recommendation in the report of a committee of the Building Research Board (D.S.I.R.) on Heating and Ventilation under the chairmanship of Sir Alfred Egerton:

'There is a lack of authoritative statistical data on which estimates of the domestic fuel consumption could be based . . . it is felt that steps should be taken, if possible, to collect such statistics related to comparable conditions.'

For the first year of the experiment the twenty houses were left unoccupied, but were run by Building Research Station staff to an experimental routine based on the activities of an imaginary family of husband, wife and two children. Fires were lit and tended, baths drawn off, ovens lit and lights turned on at set times in every house. Instruments were installed and measurements made which provided information on house temperatures, thermal input and system efficiencies. The first results of this work were presented to the Architectural Science Board in December 1948, in a paper entitled 'The Economics of House Heating', by Richard Eve and J. C. Weston, and a further paper entitled 'Heating Research and House Design', by Richard Eve, was presented in December 1949.

In the spring of 1948 the houses were tenanted by applicants from the housing register of the Watford Rural District Council and all further experimental work has been done with the houses occupied.

The purpose of the present paper is to supplement the two papers mentioned above, and certain other papers which have been published elsewhere,* with a discussion of the tenants' views of the various heating systems as experienced in these houses, and to suggest certain conclusions which might be drawn regarding the heat requirements of different families.

The Houses. The twenty houses in the first group were equipped with nineteen different combinations of appliances for space heating, water heating and cooking. Sixteen of the houses had through living rooms and working kitchens with a dining recess only partially separated from the kitchen; the remaining four houses had front and back living rooms and sculleries. The former are referred to as A type, and the latter as B type houses. Ground floor and first floor plans of the two types are shown in Figs. 1 and 2.

The four terrace houses added in 1948 and forming the second group all had the same form of heating. They were open plan houses with an L-shaped living room comprising three-quarters of the ground floor, out of which the staircase led to the first floor. A small working kitchen completed the ground floor. Plans are shown in Fig. 3.

All the houses had three bedrooms and a combined bathroom and W.C. on the first floor, and a second W.C., fuel store and shed outside. The heating systems included open fires, gas and electric fires, openable stoves and whole house heating by radiators or forced warm air. Details of installations are given in the Appendix.

The houses were insulated to the values recommended in the Egerton report (i.e. having U values of 0.2 B.Th.U. per sq. hr. degrees F.).

The Tenants. The tenants form a good cross section of the community. Their incomes vary from £250-£1,000 p.a., with the majority lying between £350-£500. Among them are found printers, laboratory assistants, various grades of scientific workers, a milkman, a surveyor, an electrician, and a G.P.O. linesman.

It was not intended that the role of the tenants should be a passive one, and from the time that they were first visited as prospective tenants the conditions of their tenancy were made clear. Owing to the small number of houses, which meant that systems were not duplicated, it was decided that each tenant should be asked to occupy several houses in succession, so that the personal factor could largely be discounted in the data. This requirement was the most onerous of the special conditions, though measures were taken to make it as easy as possible.† They were also required to allow access to scientific and other staff when this was necessary, and to use only the appliances provided in the houses and the fuel supplied by the Building Research Station. (The tenants had to pay for their fuel but quantity was not limited.) Their co-operation was asked for throughout, and their experiences with and opinions of the systems were collected from time to time.

The total number of tenants whose views are considered here is twenty-two. Eighteen of these have lived in each of three houses for a year, and four in each of two houses for a year. The total number of 'tenant-experiences' is therefore sixty-two, although only twenty-two tenants were concerned. This should be borne in mind when studying the tables; it is possible, for example, for some tenants to have had more than one experience of a particular method of heating.

Living Room Heating. Table 1 shows the distribution of different methods of heating the living rooms, the number of tenants who experienced each method in these houses, and the number who expressed a preference for each form of heating. The table also shows the number of instances, based on 'tenant-experiences', in which the various systems gave adequate warmth in cold weather, and of those in which the systems gave satisfaction on more general grounds, such as expense, trouble of running and controlling the systems, and desire for radiant heat, as well as from considerations of warmth. The relations between these two groups of comments are shown in Table II. While in general good performance in respect of warmth appears to be associated with general satisfaction, there are instances both of systems giving insufficient warmth and being classed as generally satisfactory by the same users, and of systems giving sufficient warmth while being classed as unsatisfactory. These instances can be explained by the differing importance given by different tenants to the various factors (e.g. warmth and expense) affecting satisfaction.

The categories of heating methods used in Tables I and II include in some cases methods using widely differing appliances. Any comparisons between heating methods on the basis of the degrees of comfort or satisfaction recorded, or of the preferences expressed, must therefore be treated with reserve. There is, however, a striking contrast between the number of instances in which comfort was obtained in some part of the room with an open fire or openable stove, and the corresponding number with radiators or forced warm air. As will be seen from the tables, comfort was usually only obtained with the latter systems when an electric fire was used in addition to the radiators or forced warm air.

A further point requires to be noted in connection with the preferences expressed. As already explained, no tenant had first-hand experience of more than three forms of heating in this experiment, and several had experience of only two, and a few of only one. Although no doubt many of the tenants drew on previous experience or their knowledge of the systems which they had not actually used, it cannot be assumed that all preferences were expressed against the same background of experience. One method of analysing the preferences is to consider the number of direct comparisons made between pairs of systems. Thus, if a tenant experienced three systems and expressed a preference for one of them, there are two direct comparisons—between the preferred system and each of the other two in turn—and similarly the case of a tenant

* See references at end of paper.

† Linoleum was fitted throughout the first floor, and curtain rails to all windows. Since the window sizes were the same in each house there was no difficulty in moving curtains. There were generous cupboard fitments in bedrooms and kitchens. The fronts of the houses were laid out in 'open development' and the back gardens turfed and maintained by the Building Research Station. The yearly removal of each household was arranged and paid for by the Building Research Station.

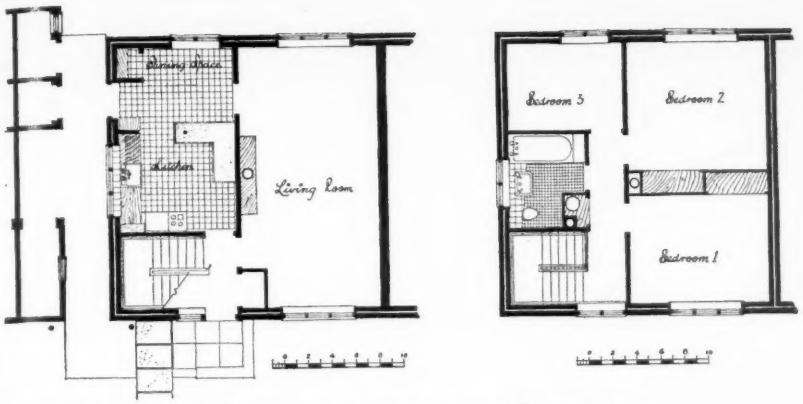


Fig. 1: Type A. Through living room type. Ground floor and first floor plans

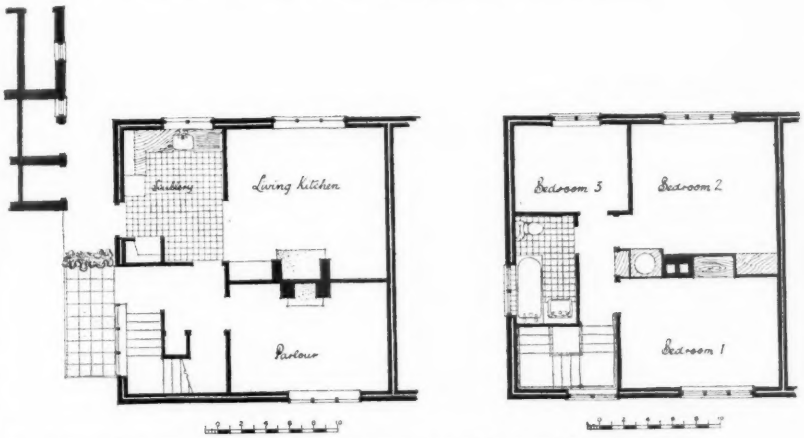


Fig. 2: Type B. Living-kitchen and parlour type. Ground floor and first floor plans

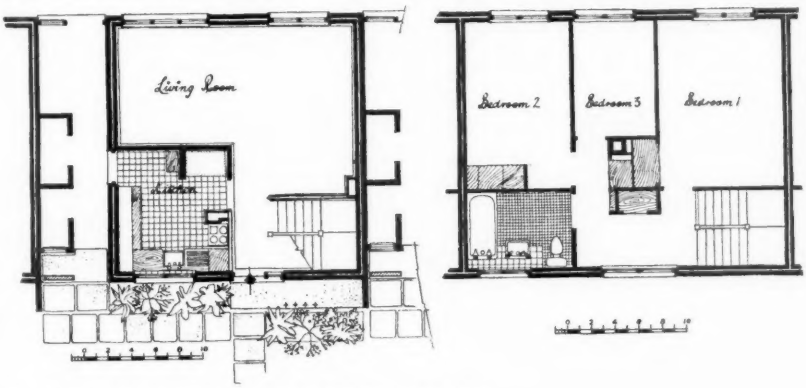


Fig. 3: Open plan type. Ground floor and first floor plans

experiencing two different methods and preferring one of them gives one comparison. Table III is built up on this basis, and this shows that the apparent general preference for the open fire is confirmed when it is compared individually with openable stoves, radiators intended to give full heating, and forced warm air. This is particularly interesting in view of the good record of the openable stove for warmth. (See Table I.)

In twenty-four cases (twelve with open fires and twelve with openable stoves) tenants spent a year in a house where the living room heating appliance was designed for overnight burning. In seven cases tenants with open fires, and in six cases tenants with openable stoves, kept them in overnight regularly during the coldest weeks of winter. In three other instances the tenants would have done so, but were unable to keep the appliance alight overnight. For the remainder the tenants considered overnight burning unnecessary or extravagant.

Kitchen Heating. Table IV shows the distribution of the various methods of heating the kitchen, the number of tenants who experienced each method, and two sets of data, based on 'tenant-experiences', expressing the comfort conditions in winter and summer respectively. The number of tenant experiences in this case is 50; 8 tenants experienced three forms of kitchen heating, 12 experienced two, and 2 experienced one.

The table shows that the methods provided for heating the kitchens are not all entirely satisfactory—the solid fuel furnaces tend to overheat the kitchens even in winter* (they do not need to be used in summer, as gas circulators are installed); the solid fuel cookers, though excellent kitchen space heaters in winter, are too hot in summer; and the independent boilers, though most of them do not make the kitchens too hot in summer, have the drawback that they must be used either to supply radiator heating to the rest of the house—a solution not favoured by many as may be seen from the section on living room heating—or in conjunction with a fire or stove in the living room. It should be added in this connection that the 'two appliance house' will involve the tenant in high running costs and extra labour.

The remaining method shown in the table involves the use of heat from the living room fire to heat the kitchen. Doing this by convected warm air is not effective because the rooms are on the same level. The alternative method of running a radiator from the back boiler of the living room fire is, however, cheap and believed effective. Unfortunately, only one of these houses is equipped in this way, though several houses so equipped and forming a new group are now being studied. The system in this particular house gave complete satisfaction to the one tenant who experienced it. Since the back boiler also supplies the domestic hot water, the amount of radiator surface it can heat is limited to 30 sq. ft., and this system would probably not give such adequate warmth to the kitchen in a less well insulated house.

The table also shows that in every case in which an unheated kitchen had been experienced it was considered too cold in winter. Out of the twenty-two tenants, eighteen said that they thought a warm kitchen a necessity, and seventeen of them added that by this they meant a kitchen with some form of continuous background heat, sufficient for comfort for cooking or eating meals in the dining recess off the kitchen, and for drying washing overnight in bad weather. A power point for an electric fire was not considered sufficient. The tenants' desire is for 'working' rather than 'sitting' warmth, and

* It has to be borne in mind, however, that the kitchens in which the furnaces are installed are small and totally enclosed, and have no small vent lights in the windows, whereas the other kitchens considered in this section are larger and are ventilated both by a small vent light at the top of the window, and by a duct in the kitchen ceiling which vents to the roof space.

TABLE I—LIVING ROOM HEATING

	Open fire	Openable stove	Radiator intended to give full heating	Radiator giving background heating with electric fire topping up	Forced warm air	Gas fire	Electric tubular heater and fire	Total
1. No. of houses	9[a]	5[a]	3	1	5	1	1	24[a]
2. No. of tenants experiencing	18	10	9	2	9	3	3	22
3. No. of tenants preferring	14[b]	—	2	1	3[c]	2	—	22
4. No. of 'tenant-experiences'	24	12	9	2	9	3	3	62
5. No. of 'tenant-experiences' in which adequate warmth was obtained:								
(1) throughout room ..	10 } 23	6 } 10	2 } 4 (2)	1 } 2	5 (2) } 8 (5)	3 } 3	3 } 3	30 } 53
(2) in part only	13	4	2 (2)	1	3 (3)	—	—	23
(3) in no part	1	2	5	—	1	—	—	9
6. No. of 'tenant-experiences' giving								
(1) overall satisfaction ..	18	7	6	1	3	3	1	39
(2) overall dissatisfaction	6	5	3	1	6	—	2	23

The figures in brackets refer to numbers using an electric fire in addition to radiators or forced warm air.
[a] In one house an openable stove was replaced by an open fire after one year.
[b] Includes 2 who had not experienced an open fire in these houses.
[c] Includes 1 who had not experienced forced warm air in these houses.

TABLE II—LIVING ROOM HEATING

'Tenant-experiences' classified according to satisfaction afforded and degree of warmth ('throughout', or 'part' or 'none' of living room)

		Open fire	Openable stove	Radiator giving full heating	Radiator giving background heating with electric fire topping up	Forced warm air	Gas fire	Electric tubular heater and fire
Overall Satisfaction	'Throughout'	10	4	2	1	2	3	1
	'Part'	8	2	2	0	0	0	0
	'None'	0	1	2	0	1	0	0
Overall Dissatisfaction	'Throughout'	0	2	0	0	3	0	2
	'Part'	5	2	0	1	3	0	0
	'None'	1	1	3	0	0	0	0
	Total ..	24	12	9	2	9	3	3

for the room to be warm to come into when used intermittently.

Bedroom Heating. Table V shows the type of bedroom heating provided in the houses, the number experiencing the various types, their preferences, and the instances in which satisfaction or dissatisfaction is recorded. The number of 'tenant-experiences' is again sixty-two.

The most striking feature of this table is the relatively small number of cases where bedroom heating, or even the lack of it, caused dissatisfaction. This is no doubt because of the high standard of insulation of the houses, which meant that satisfactory bedroom temperatures (45 degrees F. minimum) could usually be obtained without any special provision for bedroom heating. Where gas or electric fires were provided, either as the only means of bedroom heating, or for topping up convection heating, they were very little used. Table VI shows that expenditure on bedroom heating, when it is possible to separate it from other expenditure on heating, is relatively slight. Except for the special circumstances mentioned in the footnote to Table VI, the use of gas or electric bedroom heating would be mainly in short spells at bedtime in cold weather.

The mean temperatures reached in bedrooms during the winter are given in Table VII, which is taken from the report, 'Heating Research in Occupied Houses'. It will be seen that satisfactory bedroom temperatures are obtained by efficient heating systems without the use of special convection ducts—provided, of course, the insulation of the houses is good; for example, houses 19, 20 and 31 compare well with houses 9, 10, 17 and 32. There is, however, evidence both from these experiments and from others that when convection ducts are effective and not subject to smoke leakage this method of heating bedrooms is popular. In good circumstances the rise of temperature produced by convected warm air is not high—of the order of 2 degrees F. or 3 degrees F.—but this difference is greatest in the cold weather and then most welcome. During illness, especially of children, some form of topping up may be desirable, and was even considered essential by some of the tenants.

The expressions of preference for particular forms of bedroom heating, when

TABLE III—LIVING ROOM HEATING

Direct comparison	No. of direct comparisons indicating preference for: Open fire	Openable stove	Radiator giving full heating	Radiator giving background heating with electric topping up	Forced warm air	Gas fire	Electric tubular heater and fire	Total of direct comparisons
1. *Open fire with:* Openable stove	9	0						9
Radiator (full)	6		2					8
Radiator (background)	1			1				2
Forced warm air ..	5				3			8
Gas fire ..	1					1		2
Electric tubular, etc...	1						0	1
2. *Openable stove with:* Radiator (full)	·	0	1					1
Radiator (background)		0		1				1
Forced warm air ..		0			0			0
Gas fire ..		0				1		1
Electric tubular, etc...		0					0	0
3. *Radiator (full) with:* Radiator (background)			0	0				0
Forced warm air			1		0			1
Gas fire ..			0			1		1
Electric tubular, etc...			0				0	0
4. *Radiator (background) with:* Forced warm air				0	0			0
Gas fire ..				0		0		0
Electric tubular, etc...				0			0	0
5. *Forced warm air with:* Gas fire ..					0	1		1
Electric tubular, etc...					2		0	2
6. *Gas fire with:* Electric tubular, etc...						0	0	0

analysed by the method suggested in the section on living room heating, show that the preferences for electric fires are based mainly on comparisons with gas fires, convection heating with topping up, and radiators. All references are to *high level* radiant electric fires; their great advantage over gas fires is that they are out of the reach of children.

When asked whether they preferred continuous heat in the bedroom, or the type of heat that is switched on for short periods, the tenants were equally divided in their opinions. When asked whether they considered a power point in the bedroom sufficient provision, eleven thought it sufficient, including three who preferred radiators or convection ducts, six thought it not sufficient because they considered some form of continuous heating necessary; three considered that a high level electric fire should be fitted, and two a flued gas fire.

The Relative Importance of Heating Different Rooms. After the tenants had said which means of heating they preferred in living room, kitchen, bedrooms and bathroom, they were asked to arrange in order of preference the rooms which it was most important to them to have heated. It was suggested that in each case they should assume that the room was to be heated by the method which they preferred for that room.

Table VIII shows that the living room heating was in almost every case the first consideration, the majority (see Table I) preferring an open fire.

A strong demand for a heated kitchen is also shown in Table VIII. Kitchens in which there is a continuous background warmth, such as may be provided by an independent boiler or a radiator, are considered most satisfactory. It can be seen from Table IV that all the fifteen tenants experiencing unheated kitchens found that they were not warm enough in winter.

The heating of bedrooms and bathrooms is definitely considered less important than that of living rooms and kitchens, as was to be expected. It is interesting to note that although almost all agree in placing bedrooms in third or fourth place, nearly a quarter of the number were even prepared to put bathrooms in second place. It is evident that some provision for heating bathrooms should be made. It is difficult for a tenant to do this himself, since in view of the potential danger of electrical appliances in bathrooms no power point is generally provided. This provision is best made at the time of building, and might well take the form of a towel rail run off an independent or back boiler. An alternative might be to place the hot-water cylinder in the bathroom.

Warmth Requirements. The warmth requirements of the occupiers may be expected to vary with activities within the house. The temperatures obtained in the Abbots Langley Houses (3) suggest that these requirements may be classified as sitting warmth, working warmth and background warmth.

TABLE IV.—KITCHEN HEATING
In A type and open plan type houses*

	Kitchens heated by				Kitchens not heated	Total
	Independent Boiler	Solid fuel Cooker	Solid fuel Furnace	Radiator from L.R. fire		
1. Number of houses	9	2	4	1	6	20**
2. Number of tenants experiencing	18	4	7	1	14	22
3. Number of 'tenant-experiences'	23	4	7	1	15	50
4. Number of 'tenant-experiences' in which:						
(*a*) Kitchen not warm enough in winter	0	0	0	0	15***	15
(*b*) Kitchen fairly warm in winter	2	0	0	0	0	2
(*c*) Kitchen comfortably warm in winter	21	4	4	1	0	30
(*d*) Kitchen too warm in winter	0	0	3	0	0	3
5. Number of 'tenant-experiences' in which solid fuel appliances in kitchen used for summer water heating	20	4	1	0	—	25
6. Number of 'tenant-experiences' in which solid fuel appliances in kitchen used for summer water heating and:						
(*a*) Kitchen too hot in summer	0	2	0	0	—	2
(*b*) Kitchen fairly hot in summer	5	2	1	0	—	8
(*c*) Kitchen comfortably cool in summer	15	0	0	0	—	15

* The four B type houses have sculleries and are not included in this table.
** At the end of the first year one independent boiler and one solid fuel cooker were taken out, and replaced by one unheated kitchen, and one kitchen heated by a radiator from the living room fire.
*** In one case the kitchen was kept comfortably warm by running the gas water storage heater continuously.

TABLE V—BEDROOM HEATING

	Radiators giving full heating	Radiators giving background heat with electric fire topping up	Hot air from furnace	Convection ducts and topping up	Gas fires only	Electric fires only	No heating provided	Total
1. No. of houses fitted with	3	1	4	5*	6	2*	4	24
2. No. of tenants experiencing	9	2	7	12	13	4	11	22
3. No. of tenants preferring	5	0	2	5	2	8	0	22
4. No. of 'tenant-experiences'	9	2	7	13	16	4	11	62
5. No. of 'tenant-experiences' giving:								
(*a*) satisfaction	9	1	4	11	15	4	5	49
(*b*) dissatisfaction	0	1	3	2†	1	0	6‡	13

* One house had convection ducts for one year only, and electric fires only for the rest of the time.
† In addition dissatisfaction was in some instances felt with the ducts, but not with the system as a whole.
‡ In two instances the tenants were satisfied when they used their own electric fires.

(*a*) *Sitting warmth.* This means warmth sufficient for sitting for long periods, and can be obtained either by high air temperatures (up to 70 degrees F.), or by air temperatures of about 60 degrees F. to 65 degrees F., plus some high temperature radiant heat.

(*b*) *Working warmth.* This is warmth sufficient for a housewife doing household tasks, for children playing actively, and usually for meals, but not for sitting for long periods. Since it is not always easy for a person moving about to keep within a radiant beam, working warmth is best specified in terms of air temperature. It appears that a temperature of 60 degrees F. to 65 degrees F., is likely to be satisfactory.

(*c*) *Background warmth.* By this term is understood warmth sufficient to prevent excessive chilling of the structure. This is associated in general with temperatures of 45 degrees F. to 50 degrees F., which is usually sufficient to prevent harmful condensation, etc. The mean bedroom temperatures in the Abbots Langley houses very rarely fell below 45 degrees F., even in the unheated bedrooms.

Discussions with the tenants suggest that, taking into account all relevant factors, tenants can be divided into three groups:

Group I comprises those families who are content to have sitting warmth in the living room only and background warmth throughout the rest of the house.

Group II comprises those families who want sitting warmth in the living room, working warmth in the kitchen, and are content with background warmth in the bedrooms.

Group III comprises those families who want sitting warmth, or at least working warmth, throughout the house the whole time.

The relative importance of the factors operating can be expected to vary from family to family. For example, for one family economic circumstances may override a desire for greater warmth, whereas for another a particular pattern of living

may justify relatively high expenditure on heating.

Of the twenty-two families at Abbots Langley, three fall into Group I, fourteen into Group II, and five into Group III. Two of the families, one in Group I and one in Group II, would, if economic circumstances permitted, be found in Groups II and III respectively. Apart from these, however, the families in Groups I and II have a stated preference for this type of heating, and their choice is not influenced by the cost of running the system. It may also be noted that families who fall into Group II may not necessarily spend less on heating than families in Group III.

The provision made by the houses at Abbots Langley to meet these requirements is indicated in Table IX. Using the letters, a, b, and c to denote sitting warmth, working warmth and background warmth respectively, the houses are grouped according to the degree of warmth provided in the living room, kitchen and bedrooms. Where gas or electric fires only are supplied in bedrooms, these are still marked 'c' as they are not normally intended to give either working or sitting warmth for long periods. There is an obvious preponderance of houses suitable for Group III tenants, but it must, of course, be borne in mind that the scheme of heating methods in these houses was not devised primarily to satisfy any particular set of tenant requirements. It may be observed that four of the houses do not conform exactly to any of the three groups based on tenant requirements—three are one stage better in bedroom heating than is required for Group I, and one is one stage better in the kitchen than is required for Group II.

Discussion—Selection of Heating Systems for Low-cost Housing. The results of the Abbots Langley experiments suggest that, in the selection of heating systems and appliances, consideration should be given to the desirability of making provision for the *differing* requirements of families, and that families can conveniently be divided into three groups according to their requirements—for example, Groups I, II and III mentioned above.

There are, of course, other factors which should perhaps be taken into account.

(*a*) The desirability of keeping to a minimum the number of different systems and appliances. This will not only tend to reduce building and maintenance costs, but will also facilitate the allocation of houses to families of the various groups.

(*b*) The desirability of allowing for possible regional customs and preferences—for example, the provision of fireplaces in bedrooms.

(*c*) The desirability under present conditions that the provision of sufficient warmth should be possible with the minimum use of supplementary gas or electric heating.

It is a definite economy for houses to be well insulated, and in this discussion it is assumed that good insulation is provided. If, as is recommended, the standards of insulation are those proposed in the Egerton report, background heating throughout the house will be obtained without special provision.

TABLE VI—BEDROOM HEATING

Weekly consumption, in terms of money, of gas and electricity for bedroom heating during the March quarter

	Convection duct and electric or gas fire	Electric or gas fire only
Number of tenants spending less than 6*d.* per week	6	9
Number of tenants spending 6*d.* and over, but less than 1*s.* per week	2	5
Number of tenants spending 1*s.* and over, but less than 2*s.* per week*	2	1
Number of tenants spending 2*s.* per week and over.* (Highest is 3*s.* 10½*d.* per week) ..	1	2
Total	11	17

* The six tenants spending more than 1*s.* per week during the coldest quarter on bedroom heating are actually three families in each of two years. Two of these families are the highest spenders on fuel generally on the estate, and the third uses one of the bedrooms as a study in the evening. Generally speaking it can be assumed that a tenant will not spend more than 1*s.* per week on bedroom heating in cold weather unless there is illness in the family.

TABLE VII—MEAN TEMPERATURE, ABBOTS LANGLEY*

Period—1 October to Mid-May

Winter 1948-49 House No.	9	10	11	12	13	14	15	16	17	18	19	20	21	22	31	32	33	34	35	36
Living-Room(1)	60·7	59·1	60·1	59·8	61·6	61·1	59·5	59·8	60·2	57·0		60·0	55·7	62·4	61·2	58·6	58·1	57·7	53·8	53·8
Dining Space(2)	62·0	57·7	61·4	67·4	67·5	63·9	64·2	64·6	58·7	64·2		64·0	56·0	60·9	60·3	57·1	62·1	56·4	64·7	60·6
Kitchen(3)	63·6	58·3	63·6	68·9	69·3	64·3	65·8	64·3	59·0	67·0		66·9	58·2	63·1	57·0	55·1	63·8	58·6	58·7	56·8
Hall	57·0	53·6	54·7	54·4	57·4	56·1	59·4	56·9	56·2	57·8	empty	55·0	54·1	59·1	53·0	56·2	53·5	53·9	48·5	47·7
Landing	57·7	56·3	56·5	52·6	58·9	58·9	59·4	58·7	58·8	60·0		56·6	56·8	61·1	55·8	56·2	56·9	58·0	50·5	49·6
Bedroom 1	58·8	55·4	55·6	52·8	56·8	58·6	56·9	58·4	61·8	56·9		54·8	53·3	57·0	59·5	56·8	57·0	53·3	55·5	55·2
Bedroom 2	59·1	53·7	56·6	53·9	58·0	58·2	55·0	58·8	62·8	58·0		55·2	53·9	57·6	58·7	55·6	56·6	54·4	53·7	53·4
Bedroom 3	57·7	53·5	55·5	54·2	58·4	60·4	54·9	59·0	58·7	57·3		54·1	49·2	54·3	53·2	51·3	56·1	50·4	51·9	51·3
Bathroom	59·7	54·7	55·9	54·4	62·9	62·0	61·1	61·0	58·8	60·9		54·7	53·6	58·6	53·2	56·2	58·6	56·0	48·6	49·6
House Mean(4)	59·8	55·9	58·0	57·9	61·3	60·5	59·5	60·1	59·6	59·5		58·1	54·8	59·7	57·2	56·0	58·0	55·6	55·1	53·9
Outside Temperature 44·5° F. Wind speed 8·2 m.p.h.																				
Winter 1949-50 House No.	9	10	11	12	13	14	15	16	17	18	19	20	21	22	31	32	33	34	35	36
Living-Room(1)	61·7	59·0	60·1	59·6	61·7	64·8	64·1	64·8	62·1		66·0	59·6	57·3	60·0	65·6	55·7	58·3	57·7	53·7	52·6
Dining Space(2)	58·0	59·8	60·5	63·3	63·9	65·8	69·8	69·8	58·4		65·1	64·8	56·1	58·0	65·3	56·5	62·0	54·3	59·0	60·7
Kitchen(3)	60·0	59·2	63·2	63·9	66·1	66·7	71·6	68·4	58·0		66·3	67·4	58·4	57·9	58·8	55·6	63·9	56·5	55·7	58·2
Hall	54·3	52·5	56·2	55·8	61·6	59·6	58·0	64·2	52·6	empty	58·2	56·3	54·3	53·9	53·5	55·2	53·0	53·5	48·7	48·6
Landing	55·4	54·9	58·9	56·6	64·6	61·3	58·6	62·7	59·1		59·8	56·9	57·1	56·8	56·2	55·4	54·0	56·0	50·3	49·4
Bedroom 1	56·4	54·2	57·3	56·2	61·7	62·7	58·1	59·3	58·9		57·6	56·3	53·4	53·9	57·9	54·1	52·5	53·5	54·7	54·9
Bedroom 2	55·6	53·4	60·1	56·6	64·1	62·4	58·5	59·1	59·6		56·8	55·9	54·2	54·5	58·5	54·8	52·3	52·0	53·2	53·0
Bedroom 3	53·3	53·0	56·1	54·2	62·3	61·0	58·7	59·0	58·1		54·6	55·4	51·6	50·8	53·7	50·6	50·7	50·8	52·0	50·7
Bathroom	57·7	54·1	56·8	57·2	63·1	61·4	58·0	62·7	54·9		58·7	54·6	54·5	54·6	53·7	55·4	54·2	54·8	48·7	49·8
House Mean(4)	57·4	55·9	59·0	58·3	63·1	63·0	61·9	63·5	58·4		60·9	58·7	55·4	56·1	58·9	54·9	55·7	54·6	53·5	53·9
Outside Temperature 45·4° F. Wind speed 8·5 m.p.h.																				

NOTES : (1) Parlour in 31, 32, 35 and 36. (2) Kitchen-living-room in 31, 32, 35 and 36. (3) Scullery in 31, 32, 35 and 36. (4) Mean of all rooms, living-room included twice except in 31 and 32, where parlours are included twice, and 35 and 36 where kitchen-living-room is included twice.

* From Heating Research in Occupied Houses, by J. C. Weston, Table 2.

PARTICULARS OF EXPERIMENTAL HOUSES

House	Plan type	Space heating			Water heating	Cooking
		Living room	Kitchen and dining space	Bedrooms		
9 (1st year)	A	Continuous burning open fire	Independent boiler	Convection and topping up	Independent boiler	Gas
9 (2nd & 3rd year)		Continuous burning open fire	Not heated	Convection and topping up	Back boiler to living room fire and electric sink heater	Gas
10	A	Continuous burning open fire	Not heated	Convection and topping up	Gas storage heater	Gas
11	A	Gas fire	Independent boiler	Gas fires	Independent boiler (gas sink and bath heaters*)	Gas
12	A	Electric tubular heaters and electric fire	Independent boiler	Electric convectors	Independent boiler (electric sink heater*)	Electric
13	A	Radiators	Independent boiler and radiator	Radiators	Independent boiler	Electric
14	A	Radiators	Independent boiler and radiator	Radiators	Independent boiler	Electric
15	A	Radiators and electric fire	Independent boiler	Radiators and electric fires	Independent boiler (immersion heater*)	Electric
16	A	Radiators	Independent boiler and radiator	Radiators	Independent boiler (immersion heater*)	Electric
17	A	Inset openable stove	Not heated	Convection and topping up	Electric storage heater	Electric
18 (1st year)	A	Inset openable stove	Solid fuel cooker	Convection and topping up	Solid fuel cooker	Solid fuel
18 (3rd year)	A	Continuous burning open fire	Radiators	Electric fires	Back boiler to living room fire and gas sink heater and attachment to living room fire	Gas
19	A	Warmaire cabinet heater	Independent boiler		Independent boiler	Electric
20	A	Improved open fire	Solid fuel cooker	Gas fires	Solid fuel cooker	Solid fuel
21	A	Continuous burning open fire	Not heated	Gas fires	Back boiler to living room fire and gas multipoint	Gas
22	A	Freestanding openable stove	Not heated	Gas fires	Back boiler to living room fire (immersion heater*)	Gas
33	A	Open fire	Independent boiler	Gas fires	Independent boiler	Gas
34	A	Open fire	Not heated	Gas fires	Back boiler to living room fire (gas sink heater and circulator*)	Gas
		Front living room	*Back living room*	*Bedrooms*		
31	B	Back-to-back cooker	Back-to-back cooker		Back-to-back cooker	Solid fuel
32	B	Inset openable stove in heat service unit	Back panel of heat service unit	Convection and topping up	Back boiler to living room fire and gas circulator	Gas
35	B	Open fire	Oven-over-fire combination grate		Back boiler to combination grate	Solid fuel
36	B	Open fire	Side oven combination grate		Back boiler to combination grate	Solid fuel
		Living room	*Kitchen*	*Bedrooms*		
37	Open plan	Forced warm air	Solid fuel furnace	Forced warm air	Solid fuel furnace and gas circulator	Gas
38	Open plan	Forced warm air	Solid fuel furnace	Forced warm air	Solid fuel furnace and gas circulator	Electric
39	Open plan	Forced warm air	Solid fuel furnace	Forced warm air	Solid fuel furnace and gas circulator	Gas
40	Open plan	Forced warm air	Solid fuel furnace	Forced warm air	Solid fuel furnace and gas circulator	Electric

* Supplementary water heating appliance added at end of first year.

Taking into account the above considerations, experience so far suggests that the following methods of heating for low-cost housing are likely to be acceptable.

For Families in Groups I and II, the installation of an open fire with sufficient back boiler capacity to provide, in addition to the domestic hot water, enough radiator area to give working warmth to the kitchen, or kitchen and dining recess, and a towel rail to the bathroom. Group I tenants could choose to turn off the radiators, and Group II tenants could have the whole of the ground floor warmed. An additional gas or electrical appliance might be provided for summer water heating. With good thermal insulation of the houses, background warmth in the bedrooms is assured. If, however, it is thought desirable to cater for emergencies, heating facilities in one bedroom might be provided.

Other systems are, of course, possible, as exemplified in Table IX; although some of these provide additional warmth in other rooms, this is done at the expense of warmth in the kitchen.

For Families in Group III, the problem is more difficult. They will be able to obtain their higher standard of warmth with the system described above only if they burn sufficient fuel on their open fire and provide themselves with subsidiary means of heating in hall and bedrooms. The best solution would seem to be some form of whole house heating. A rather less satisfactory alternative might be an open fire in the living room giving convected warm air to the bedrooms, and an independent boiler in the kitchen supplying a radiator in the hall and a towel rail in the bathroom in addition to the domestic hot water. Both these installations would be more expensive in capital cost than that suggested for Groups I and II. The running of two appliances, even though used intermittently,

TABLE VIII—ROOMS WHICH TENANTS CONSIDER IT MOST IMPORTANT TO HAVE HEATED

(The form of heating in each case being that preferred for the particular room)

Order of importance	Living room	Kitchen	Bedrooms	Bathroom
1	20	2	—	—
2	2	14	1	5
3	—	4	13	5
4	—	2	8	12
Number of tenants	22	22	22	22

TABLE IX—LEVELS OF WARMTH IN HOUSES

Level of warmth in			Number of houses		Appropriate tenant group
Living room	Kitchen	Bedroom			
a	c	c	7		I
a	b	c	5		II
a	a	a	7	10	III
a	a	b	1		
a	b	a	0		
a	b	b	2		
a	c	b	3		I (with a higher grade of bedroom heating)
a	a	c	1		II (with a higher grade of kitchen heating)
			Total 26*		

NOTE : a=sitting warmth.
b=working warmth.
c=background warmth.

* Two houses are counted twice as their heating arrangements were changed after the first year.

has been found to be more costly than the running of one appliance only, while a system of whole house heating has to be run continuously, and expenditure on it cannot therefore be cut below a certain minimum. The cost of running the type of system suggested for tenants in Groups I and II can, however, be drastically reduced by not lighting the fire till afternoon, and yet the tenant can still have a reasonably warm house during the evening.

Experience at Abbots Langley suggests that greater hardship results from putting a family whose expenditure on heating must be small into a house with whole house heating than from putting a family which prefers a house that is warm throughout and can afford to pay for the heating into a house with a modern open fire warming the whole ground floor. The family which does not want the whole house heating is being required to pay more than it wishes, and, moreover, the service provided does not give satisfaction, particularly in depriving the family of what it regards as the essential comfort of an open fire.

Acknowledgment. The authors wish to express gratitude to Dr. Weston and Dr. West of the Building Research Station for helpful discussion during the preparation of this paper. The paper is published by permission of the Director of Building Research.

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Correspondence

THE TOWN AND COUNTRY PLANNING ACT, 1947

SIR,—Your gods and my gods are being threatened by strange gods, and although perhaps we do not laugh at the situation, as did Pertinax, we do not seem as a corporate body to be doing much about it. You will have guessed that I refer to the operation of the above act by the various county and sub-area planning committees, and perhaps more so to the recommendations given to these august bodies by their permanent officials.

As things are going in this country at the moment, and I can well believe it is not the only one, the proper functions of an architect seem to be in no little danger of extinction. Not only do these bodies interfere with our elevations as submitted for their approval, but we are informed—quite apart from building lines, which we are used to—that the house or building (what you will) must be sited as they say, and not where our judgment, or questions of aspect, client's wishes, etc. would properly dictate. I have a case in this district, where work has been stopped six weeks for no other reason than that the house is being built on the opposite side of an ample frontage, because on the submitted plans it was shown on the reverse side of the site. I feel perfectly sure that it was never the intention of the framers of the 1947 Act that the powers given to planning authorities should operate in such a vexatious and tyrannical manner. The question is: what should be done about it? It is all very well to say the Act provides for appeal to the Minister, where the appellant feels aggrieved. In a case where work has already been suspended on the order of the planning authority for six weeks is the client to waste further time while the cumbersome machinery of appeal comes into operation?

Perhaps, being a sufferer under these conditions, I have not put my points so well as they could be put, but now I come to the kernel of the matter. That is: do we all realise what is happening to the status of the architect if this state of things is going to obtain generally? We may not say what pitch our roofs shall be, what their colour shall be, or whether they shall be hipped or gabled. Planning authorities now tell us where or where not our building shall be sited. As to the question of whether our client can afford the extra expense of a roof at 52½ degrees pitch instead of the hipped roof at 37½ degrees pitch as shown on the submitted plan, it never enters their heads; of course it does not; they are not spending their own money.

Finally, why should the building owner go to an architect at all? Why not send in something on the back of an old envelope, and let the planning authority lick it into shape for him? The average small building owner does not want an architect, except to put his own ideas into a shape that will pass muster! All he wants is a building licence, which he can't get without planning permission. But here is the rub, having waited five years for his licence—for reasons unnecessary to state; we all know them—why should we have to wait a

further two months before enjoying the fruits of his patience, because of some pettifogging infringement of the strict letter of a law which was never intended to operate for hair's breadth deviations.—Yours faithfully,

R. S. CAVE [*L*]

BAROQUE AND ROCOCO

SIR,—Mr. J. Isaacs, M.A., (Oxon), Professor of English Language and Literature London University, in a lecture at the general meeting of the R.I.B.A. on 17 June 1952, is reported in the JOURNAL as having said: 'There is nothing the rococo mind hates more than the baroque'.

Sir Banister Fletcher, in his *History of Architecture*, writes on page 599: 'The Baroque . . . is sometimes called the rococo style', and I wonder who is right.—Yours faithfully,

JON HOETS [*A*]
Cape Town.

GALLOPING JOISTS AND IRISH JAYS

SIR,—The letter from Mr. Albert D. Cordiner in the July issue reminds me of a traveller who came to a well-known architect's office and asked to see Mr. Ariba, and retired when asked which Mr. Ariba he meant as there were several in the office.

H. R. PARKIN [*A*]

Practice Notes

Edited by Charles Woodward [*A*]

IN PARLIAMENT. Building. Personal Labour. Asked why, though a man is debarred from exceeding the free minimum for repairs to his house by employing his personal labour in addition, he is also debarred from counting the cost of similar labour as a claim for relief against Schedule A Tax, the Financial Secretary to the Treasury replied: the value of the personal labour of the building owner is not reckoned as part of the cost of repairs either for the purpose of a building licence or for the purpose of a claim for relief against Schedule A Tax. (16 July 1952).

MINISTRY OF HOUSING AND LOCAL GOVERNMENT. Timber Licences for Housing. It appears that some confusion has arisen over the correct procedure for applying for softwood licences in connection with housing. Applications should be made to the appropriate regional office of the Ministry of Housing and Local Government.

In the London region applications for softwood for housing purposes should be made to the regional office of the Ministry at Caxton House, Tothill Street, S.W.1, and *not* to offices of the Timber Control (L.R.L. 5/52).

Sale of Council Houses. Circular 64/52, dated 26 August 1952, refers to the powers which councils now have to sell council houses and to build houses for sale. Local authorities now have discretion to sell occupied houses to sitting tenants, and to sell houses which are unoccupied, or have not been previously let, provided they go to persons in need of houses. No local authority can force its tenants to buy, but tenants have an opportunity of buying the houses in which they are living if they wish to do so and if the council is willing to sell.

The Minister has given his general consent to the sale of council houses on the following general conditions:

Price. In the case of a house completed on or before 8 May 1945 the sale price is to be not less than 20 times the net annual rent exclusive of rates, water charges, etc. In the case of a house built after 8 May 1945 the sale price is to be not less than the total cost to the authority of providing the house.

Conditions of Sale. For 5 years from the date of sale the house is not to be let at a higher rent than that fixed by the local authority, nor is it to be resold at a higher price than that at which it was bought, subject to allowance for improvements or depreciation. An owner who wishes to resell must first of all offer it to the local authority at the price at which it was bought, subject to allowance for improvement or depreciation.

The Minister has also given his general consent to local authorities to lease council houses for a term of 99 years or longer. The general conditions are similar to those for the sale by the council of a freehold property, except that the minimum price is adjusted to allow for the proposed ground rent.

Local authorities may agree to payments for a sale or for the granting of a lease being made by instalments, or to a payment being secured by a mortgage.

Houses to be Built under Licence. Circular 70/52, dated 27 August 1952, points out to housing authorities that in many districts there are still many families in need of a house for their own occupation who are prepared to build one, and also builders and building workers not at present engaged on house building who could build these houses without prejudice to other essential services. He therefore asks all local authorities within the next month to review the applications which have been made to them for licences, and to inform the principal regional officers of the Ministry of the number for which they would be prepared to issue licences if additional licences could be made available. The Principal Officer will then advise the authority to what extent, if any, licences for additional houses can be issued between now and the end of 1952.

Since the number of licences issued will not affect the programme of the authorities themselves, the Minister is confident that residence in the area in which it is desired to build will not be regarded as an essential qualification for a licence. But licences should continue to be issued by the authority for the area in which the applicant desires to build.

Derequisitioning of war-damaged premises. Circular L.R.L. 6/52, addressed to the L.C.C., the Common Council of the City of London, and Metropolitan Borough Councils, refers to the release of premises which have suffered war damage. Where it is proposed to release premises before all the war damage has been made good by the local authority it has been found that difficulty arises where the technical officer of the authority may exclude occupational items which in his opinion are attributable to war damage, but for which the War Damage Commission find they cannot accept liability when a claim is made on them at a later date.

Officers preparing schedules of condition are therefore requested to notify the Regional Manager of the Commission of any defects which they propose to treat as war damage. If the Commission agree they will inform the local authority. If there is a difference of opinion the matter should be discussed between the respective technical officers, with a joint inspection of the premises at which the owner or his agent should be invited to be present.

Land for Housing. Circular 65/52, dated 30 August 1952, addressed to local authorities in England and Wales, refers to the selection of sites for housing for the next three years' housing programme.

The circular reminds housing and planning authorities that they should have regard to the needs of the private developer, and suitable sites should be earmarked for this purpose. If necessary, the housing authority should be prepared to buy land for disposal to private builders, where the individual builder may have difficulty in getting a site at an appropriate price. The Minister hopes that all authorities will be prepared, as necessary, to help private persons who need houses and are anxious to build them for themselves but are in difficulties over sites.

One small way in which authorities can help private house builders is by dealing really quickly with their applications for bye-law and planning consents. An application for permission for a single house ought to be settled within a month.

Steel Economy. Circular 69/52, dated 3 September 1952, refers to the *Steel Economy Bulletin* No. 1 issued by the Ministry of Works. The Minister requests local authorities to see that the recommendations in the Bulletin are observed both when dealing with applications for bye-law permission and for work for which they are themselves responsible. He will require to be satisfied by the architects or engineers concerned that the recommendations have been taken into account before he arranges a starting date for any scheme to which the recommendations are applicable.

MINISTRY OF WORKS. Cast Iron Rainwater and Soil Goods. The Minister of Works has authorised an increase of 5 per cent in the prices of cast iron rainwater and soil goods, gutters and connections. The increase is effective as from

25 August. The industry has expressed to the Minister its intention to hold these prices, subject only to any further major increases in cost, at least until the end of the year. (M.O.W./100/52. P.I. 73. 26 August 1952.)

THE ROYAL INSTITUTION OF CHARTERED SURVEYORS. Quantity Surveyors' Fees. In the R.I.C.S. JOURNAL for August 1952 it is stated that the Ministry of Housing and Local Government has agreed to accept the following interpretation of the scale of fees in connection with two-storey flats and buildings consisting partly of houses and partly of flats:

(*a*) The scale of charges for quantity surveyors' services in connection with flat dwellings of more than two storeys in height for local authorities (Ref. No. 3/1) is applicable to flats of two storeys.
(*b*) The scale for flats shall apply to quantity surveyors' services in connection with the erection of buildings consisting partly of houses and partly of flats; for example, where a block of dwellings has houses in the centre and flats at either end.
(*c*) Where a scheme includes houses as well as either or both of the buildings described above, the external services, that is to say drains, paths, fences, etc., within the curtilage of the said buildings, will be paid for on a *pro rata* basis according to the number of flats or houses, two flats being taken as the equivalent of one house.

SELF-HELP HOUSING. The London County Council on 15 July 1952 approved a joint report by the Housing and Finance Committees on self-help housing associations. The report recommended the Council to consider applications for loans in appropriate cases, the maximum period for repayment not to exceed 20 years.

PUBLIC LOCAL INQUIRIES RELATING TO LAND. The Law Society and the Royal Institution of Chartered Surveyors have presented to the Lord Chancellor and the Minister of Housing and Local Government a Memorandum of Observations on Public Inquiries Relating to Land. The Memorandum is dated May 1952 and deals only with inquiries held by Ministers regarding proposals for the acquisition of land by public authorities, or which may lead to the compulsory acquisition of land (e.g. the designation of the site of a new town) and appeals against the decisions of local planning authorities regarding the use or development of land.

The Law Society and the Royal Institution have invited consideration of the following recommendations in relation to the types of inquiry referred to above:
(*a*) That public inquiries should be held with reasonable promptitude and the Minister's decision given with the utmost speed.

(*b*) That, where the views of any Government Department are relevant factors in reaching a decision in connection with which the inquiry is held, those views should be made available to the parties in advance and should be open to discussion at the hearing, whether or not oral evidence is given at the hearing in support of these views.

(*c*) That the reports of Inspectors (including their review of the evidence) should be published.

(*d*) That the Minister should always give reasons for any departure from recommendations made in Inspectors' reports, except where the Minister certifies in any particular case that on security grounds it would be injurious to the public interest to do so.

(*e*) That consideration should be given to the possibility of creating an independent inspectorate, under the Lord Chancellor, from which Inspectors could be appointed by any Minister of the Crown to conduct a public inquiry.

LAW CASES

Ealing Corporation v. Minister of Housing and Local Government, Middlesex County Council and Henry Boot and Son Ltd. 28 July 1952. In this action Ealing Corporation claimed against the Minister of Housing and Local Government and Middlesex County Council a declaration that the Minister's confirmation of a purchase notice served by Henry Boot and Son Ltd. on the Corporation under the Town and Country Planning Act in respect of the site in question was *ultra vires* and void.

The plaintiff's case was that after the County Council's refusal to permit development of the site for flats, Henry Boot and Son Ltd. served a notice under Section 19 of the Act requiring the Ealing Corporation to purchase their interest. In March 1951 the Minister notified the other parties of his intention to confirm the purchase notice without modification, but in a letter to the County Council in May 1951 the Minister purported to confirm and modify the notice by substituting the County Council for the Ealing Corporation as the purchasing authority.

In granting a declaration that the Minister's purported confirmation of the purchase notice was *ultra vires* and void, the Judge said that once the Minister had confirmed a notice requiring a particular authority to purchase land, it would seem strange if he could, without notice to the authority, remove them from being a purchaser and substitute the planning authority, yet that was what the Minister claimed he could do.

It might be that the Minister could change his action and give a new notice, but what he could not do was arbitrarily to change his action and make an order without giving the parties an opportunity of being heard and of making representations to him as to whether they were, or which of them was to be, the purchaser. This was contrary to the whole object of that section of the Act.

His Lordship said that the Minister or his officials had tried to short-circuit the provisions of the section by holding 'one of those interminable informal conferences so beloved of Civil Servants', but he was glad to think that, so far as the Court was concerned, that failed. (THE ESTATES GAZETTE, 2 August 1952.)

Hanily v. Minister of Local Government and Planning. Compulsory Purchase by Central Land Board. In this case manufacturers applied to the local planning authority and obtained their permission to develop the land by erecting a factory on it. This application was made without the knowledge of the owner of the land.

An offer of £400 was then made by the manufacturers, which the owner refused, and they applied to the Central Land Board compulsorily to acquire the land under Section 43 (1) and (2) of the 1947 Planning Act. The Board, being unable to acquire the land by agreement, made a compulsory purchase order in respect of the land in July 1950, which was confirmed by the Minister of Town and Country Planning in December 1950. In the meantime the owner accepted an offer of £1,750 from a purchaser who wished to use the land for a joinery workshop.

The owner of the land applied to the Court to quash the two orders on the grounds that the orders were made, not for the purpose of the functions of the Central Land Board, or for the purpose of bringing into development the land to which the orders related, but for the purpose of preferring one approved development of the land to another. Alternatively, that at the time of the making of the orders there was no planning permission under Part III of the Act for the development for the purpose for which the land was to be disposed. The Court held:
(1) Any person who genuinely hoped to acquire an interest in land could apply for planning permission in respect of it and not only the owner of the land or a prospective purchaser applying with the owner's consent, and therefore the manufacturers were competent to make an application for planning permission.
(2) The Town and Country Planning Act 1947 did not require a local planning authority to notify likely objectors or the owner of the land of their consideration of an application for planning permission, and therefore the permission granted without such notification was valid.
(3) Even if the planning permission was invalid, the compulsory purchase and confirmation orders were not thereby invalidated since Section 43 (1) of the Town and Country Planning Act 1947 required only that planning permission should have been obtained before the actual acquisition of the land, and the orders did not constitute such acquisition but merely authority for acquisition.
(4) As the Central Land Board were exercising their powers of compulsory purchase to prevent a sale at a price above that for existing use value, the compulsory purchase and confirmation orders were valid notwithstanding the existence of a prospective purchaser willing to pay a price acceptable to the owner. (1952. 1 All E.R. 1293.)

Sincock v. Bangs (Reading). Architect's negligence. Queen's Bench Division. 24 July 1952. The plaintiff, an architect and surveyor, was instructed by the defendant to inspect a farm which the defendant wished to buy. The plaintiff asked the defendant if a 'detailed survey' or a 'general opinion' on the property was required. The sale was shortly due to take place and the defendant said that he required a general opinion. He also asked the plaintiff to undertake architectural work in connection with repairs and improvements. The defendant purchased the property and afterwards discovered that there was a settlement at one corner of the house and that dry rot and wood worm were present, necessitating costly repairs. The plaintiff brought an action to recover £137 6*s*. 2*d*. fees for the initial inspection and for preparing plans and specifications for the repairs and improvements. The defendant, alleging that the plaintiff negligently and in breach of duty had failed to warn him of the defects in the property, counterclaimed for damages. The plaintiff denied negligence or breach of duty.

The Judge said that the plaintiff had been in the position of a 'watch dog' for the defendant, who required professional advice to ensure that any offer he made for the house was prudent. It was the plaintiff's duty to warn the defendant of any defects which might have a material effect on the value of the property. At the initial survey the plaintiff had had neither time nor opportunity for carrying out a detailed examination of the structure and he had only been asked for a general opinion but, making all allowances for the circumstances, his Lordship was satisfied that the opinion expressed by the plaintiff was wrong and that it amounted to negligence and breach of duty as the defendant's architect. The plaintiff was entitled to the fees claimed, except for the fee for the initial survey, and the defendant was entitled to recover £307 19*s*. on the counterclaim. There would, therefore, be judgment for the defendant for £173 15*s*. 10*d*. with costs. (*Current Property Law*. 1952. 521-600.)

Amalgamated Building Contractors Ltd. v. Walsham Holy Cross Urban District Council. In the Court of Appeal on 1 July 1952 it was held that an extension of time given by the architect under clause 18 of the R.I.B.A. Form of Contract after the date of completion of the works is valid, and providing the architect has also issued the certificate under clause 17, the building owners are thereby entitled to claim liquidated damages.

In this case the date for completion was 7 February 1949, and on 19 January 1949 the contractors asked the architect for a 12 months' extension of time on account of difficulties relating to labour and materials. They repeated their request on 27 January, but the architect did not reply, beyond a formal acknowledgment. The contractors completed the work on 28 August 1950, and on 20 December 1950 the architect wrote extending the time for completion to 23 May 1949.

The only point at issue in the Court of Appeal was whether in law there had been a valid extension of time. The Court expressly stated that on the pleadings and at the trial, the only point raised by the contractors was whether the extension was invalid in law. No point was taken that the architect had not acted as he should have done, or that the building owners had told him not to grant an extension, or that he had held up the matter for an unreasonable time. The Court said that if it was desired to raise matters of that kind, they should have been specifically pleaded and fully investigated. As it was, however, no evidence was taken at the trial at all. The Court also said that if the contractors were dissatisfied they should have asked for arbitration as provided for in the contract, but they did not do so. The Court also observed that an extension of time under Clause 18 may be given quite informally and need not be in writing. (A certificate under Clause 17 is required to be in writing.)

The Court stated that the case raised an important question under the R.I.B.A. Standard Form of Contract, which form was used in a great many building contracts, and, like other standard forms, had come to resemble a legislative code. (*All England Law Reports*, 1952, Vol. 2 Part 10, p. 452.)

Book Reviews

Het Eigen Huis, Landhuizen, villa's en andere eensgezinshuizen, by *J. P. Fokker*. 3rd ed. 11¼ in. 100 pp. text illus. Amsterdam and Antwerp: Kosmos. [1951.] (fl. 16.50.)
In this book of houses, intended for the layman who may one day build a home of his own, are shown, with plans and photographs, examples of Dutch domestic architecture of the last twenty-five years. There are no interior views! The result is depressing, being a variegated collection of 'ideal homes', beloved in our own dormitory towns, and the less familiar mannerisms of the Wright-Dudok phase and of the new empiricist.

This is a sad reaction from the country that produced the 'Stijl Groep' and the '8 en Opbouw', but it should be noted that the cleavage between the traditionalist and the contemporary architect in Holland is sharper than it is here, and that there is another side to the account.

MICHAEL D. BEASLEY [*A*]

The Resistance of Piles to Penetration, *&c.*, by *Russell V. Allin*. 2nd ed. 8¾ in. xi. + 126 pp. text diags. Spon. 1951. £1 1*s*.
A new edition of a useful work by an accepted expert on the bearing power of piles.

Bauentwurfslehre, *&c.*, by *Ernst Neufert*. 14th ed. 11¾ in. 316 pp. text illus. Berlin: Tempelhof. 1951. 38 DM.
One hundred and sixty five thousand copies of this remarkable work, excluding Italian, Spanish, French and (forthcoming) Portuguese translations, have now been printed since it first appeared in 1936. Now in its 14th edition, it continues to provide a vast amount of essential basic information for those engaged in preparing plans for almost every conceivable type of building. The method employed is to use the minimum of words and the maximum of illustrations. There are over 3,600 drawings, and for this reason it is not necessary, although it is certainly useful, to have a sound knowledge of German in order to make profitable use of the book's comprehensive resources.

J. C. P.

Leben und Bauen, by *Paul Bonatz*. 8½ in. 296 pp. (12) pls. text illus. Stuttgart: Engelhornverlag Adolf Spemann. [1950.] £1 12*s*. 6*d*.
In this well produced book of 290 pages Professor Paul Bonatz, architect, thinker and teacher, now in his seventies, tells the story of his life and work. The result is an extremely rich and human document and a very readable narrative.

Those to whom the title promises a didactic treatise on matters architectural will be disappointed, for nothing could have been further removed from the mind of the author; and yet, from between the lines of this delightful book and from the casually interspersed remarks, there emerges a conception of architecture, clear, natural and undogmatic, whose basic tenet is 'simplicity'. It was during his travels in Egypt, as Professor Bonatz tells us, that he realised 'how necessary it is first to reduce every problem to its simplest elements, to its roots . . . for the fruit of beauty comes to those who seek almost by itself'.

It would be futile to try to summarise the many interesting and sometimes very amusing autobiographical notes which will delight the reader, but reference must be made to the excellent colourful descriptions of travels in Sweden, Spain, Italy, the Balkans and Turkey—Egypt has already been mentioned—which are some of the most charming highlights of the book. Of interest, particularly to an English public, will no doubt be the author's account of his work and dealings with the Nazi hierarchy during the Hitler régime and the second World War. Though by no means a National Socialist himself, he was commissioned with important work in the construction of the Autobahn; work which he undertook in successful collaboration with the engineering department of the Reichsbahn. His remarks on the æsthetics of bridge-building show his acute artistic sensitiveness and his deep understanding of the possibilities of a new engineering-architecture. His criticism of Hitler's architectural megalomania, as revealed in the plans of the Fuehrer for triumphal arches and monumental façades, is bitter and devastating.

It was in September 1943 that Professor Bonatz decided to leave Germany and to

accept an invitation by the Turkish Government to act as architectural adviser to the Ministry of Culture in Ankara. Since his stay in Turkey, Professor Bonatz's work has been rich and fruitful. Thanks to his innate tact, urbanity and patience, and to his genuine love for the land and its people, he has succeeded in overcoming many an obstacle which he encountered in a remote and foreign country.

In his capacity as a teacher of a younger generation of architects, Professor Bonatz is opposed to a wholesale and uncritical acceptance of western European or American ideas, being rightly convinced that a genuine style of Turkish architecture has to grow organically from the material and cultural roots of this country, rich in tradition and cultural heritage.

The author concludes his book with a moving statement of his personal beliefs, quoting Goethe's words: 'It is the highest happiness of thinking man to have understood that which is given to be understood and to venerate quietly that which is beyond. Though men may perpetually seek God and hope to perceive Him, it is only given to them to conjecture and not to perceive Him, to postulate Him out of His manifestations'.

The book contains 45 sensitive drawings by the author and 12 photographs. It is to be hoped that a full translation will soon be available to the English reading public.

FREDERICK SELBY [4]

Exhibition Design, by *Misha Black* [and others]. *Misha Black*, ed. 9¾ in. 186 pp. incl. pls. and pp. of illus. Archl. Press. [1950.] £1 5*s*.

Exhibition technique is a field in which this country need no longer feel ashamed of its position. In the past 15 years designers have climbed from a very humble standard to a level which is at least comparable with the best elsewhere, and it is gratifying to find that our achievement is now sometimes recognised abroad. This book, to which a team of experts have contributed the product of their special skills, covers almost every aspect of the matter—although inevitably briefly — from constructional methods to typography, but it is important to point out that it was published some months before the South Bank Exhibition was opened. It is therefore in no position to throw any appraising light on the successes and failures in the display methods of the Festival of Britain. There is a great number of illustrations, mostly photographs, but floor plans, sketches and diagrams are also included.

The American House Today. 85 notable examples &c. by *Katherine Morrow Ford* and *Thomas H. Creighton*. 10¼ in. × 8¼ in. iv + 239 pp. incl. pls. and pp. of illus. New York: Reinhold; Lond.: Chapman & Hall. [1951.] £3 4*s*.

The American house is 'different' . . . it has been ever since H. H. Richardson threw open the rooms of the Stoughton House into the hall. Thoreau had a vision of it 'a larger and more populous house, standing in a golden age, of enduring materials, and without gingerbread work, which shall consist of only one room . . . a house whose inside is as open and manifest as a bird's nest and you cannot go in at the front door and out at the back without seeing some of the inhabitants. . . .' Frank Lloyd Wright, a quarter century ago, showed how it had been achieved by 'modern mechanical heating, integral lighting and standardised unit sanitation (which) all make it reasonable as the 20th century ideal to abolish building either as boxment or borough'. Indeed, Wright had set the pattern as far back as 1900 in his 'designs for a prairie house' in the *Ladies' Home Journal*. How many architects today, or for that matter ever, look at Wright's plans? They are put off by the brash exteriors and the overworked drawing. Yet how rewarding they are with their eating and working areas, internal bathrooms, lack of corridors and that supremely magical sense of flowing interlocking spaces. But they are subversive. Almost no local authority in this country would pass them. They might even save too much money and allow a bigger house programme and that would never do.

What is it that makes the American house 'tick' and go on ticking so resolutely while ours remain moribund? Primarily, I should say, a lack of class consciousness. The average English house is always trying to emulate its betters. It remains a quasi-country mansion with a non-existent army of servants keeping the hip baths filled, the open fires laid, answering front doors with 'not-at-homes' and back doors 'to tradesmen only', and keeping out of the way in isolated kitchen quarters (below stairs if possible). Our houses remain a complex of circumscribed boxes, as if the housewife does a series of quick change acts, housemaid to cook, nurserymaid to footman. No wonder she gets tired out with such a performance. Only an innate masochism can justify it.

Wright observed this pretentious nonsense half a century ago and planned for his clients—and most of them were considerably wealthier than ours—houses which recognised the facts of life. The inefficient slavey was replaced by dependable mechanical equipment; the plan opened up to uninhibited movement, and in the process domestic architecture was reinvested with an elegance and graciousness no English house has had for decades. Until we also demand such freedom and get local authorities to revise their byelaws (which often seem designed to deal with the Flood) the English housewife will remain a slave in her own home, and have no leisure in which to enjoy it! until we ask ourselves and authority why?—why the bathroom must always be on an outside wall (where it is cold and fits with difficulty into the pattern of bedrooms); why the w.c. has to have a ventilated lobby (is it because it was once an earth closet?); why we have so many corridors and lobbies and doors, separate rooms for living and eating and cooking; and why 50 per cent of the house, which is devoted to bedrooms, is only used for 30 per cent of the time. If such things are rational, well and good; but, if not, we are wasting effort and money to maintain fetishes as obscure as any we have been appalled by in darkest Africa.

In *The American House Today* Mrs. Ford shows how the revolutionary ideas which Mr. Wright expounded half a century ago have been developed in the last five years or so. The houses she illustrates and describes (there are 85 of them) are scattered over a continent from the Gulf of Mexico to the Pacific north-west, from California to Cape Cod. Their climatic and geographical environment varies more widely than that of all Europe. Yet they possess certain significant common factors. Few are large; the majority have open plans; all have high standards of equipment; and most of them, whether they be for winter use in New Hampshire or summer use in the Arizona desert, have large windows (and why not? There isn't a window tax any more!) Nearly every one has points of interest and many, such as the Stubbins House, the Breuer House, and the Johnson Glass House, are important. The latter is, I think, much more significant than is immediately perceptible. Yet I am at a loss to find how Mrs. Ford has made her selection. It seems arbitrary. I wonder why she doesn't show, for instance, the Mies Van der Rohe Farnsworth house or the house on Belvedere Island by Jack Hillmer or any house by Rudolph and Twitchell, let alone by the grandfather of them all, Frank Lloyd Wright.

In spite of certain criticisms of this kind, this is a very stimulating book and one which should be studied by every house architect, and even more by housing authorities.

FELLO ATKINSON [4]

Building in England down to 1540. A documentary history, by *L. F. Salzman*. 9¾ in. xvi + 629 pp. incl. pl. + 21 + 1 (folding) pls. Oxford: University Press. [1952.] £2 10*s*.

It has long been known to students of mediæval architecture that Mr. L. F. Salzman completed, almost twenty years ago now, a comprehensive study of building methods of the Middle Ages, based on documents. This has been due to the great generosity with which Mr. Salzman placed the unpublished manuscript at their disposal. At last a grant from the Crompton Fund has made it possible for the Oxford University Press to publish this masterwork.

The text is extensive, and followed by an immense corpus of literary references to building, and full transcripts of *all* the extant building contracts; but the interest never flags. This would be remarkable, whatever the subject, but is doubly so where such highly technical matter is concerned; the feat is due to the extraordinary skill with which Mr. Salzman has interwoven meticulous scholarship with the human approach that has made his earlier books justly famous.

So far as it is possible to understand the architectural methods of the Gothic age,

understanding is here made easy. The significant facts have been drawn out of several thousand manuscript and printed sources, set in order, commented on and admirably indexed. The serious problems concerning the production of mediæval art here find their solution; for against the overwhelming weight of evidence from contemporary and impartial records there can be no appeal. Only very rarely, and seldom on matters of moment, has Mr. Salzman been defeated in his search for the inevitably correct translation of a term or explanation of a process.

There is indeed room for detailed correlation with actual examples of building techniques; a fully illustrated commentary which would link this Summa of the documents to the works, for example, of Addy and Innocent, would be of the utmost value. But within its own field, Mr. Salzman's work is definitive, and covers every part of the ground in the most thorough manner.

A score of unimportant misprints apart, no fault can be found in this majestic work, which will be fundamental to all future research on the period. In view of the remarkable durability of mediæval buildings, careful study of the book would be well worth the while also of all architects, engineers and building technologists of our own day. It is certain that we have not yet learnt all the lessons which the Middle Ages can teach. We must be deeply grateful to Mr. Salzman for the prodigal and prodigious expenditure of time and energy which has put so many of these lessons into language at the same time intelligible and entertaining. JOHN H. HARVEY

Nineteenth Century Architecture in Britain, by *Reginald Turnor.* (British Art and Building Series.) 8¾ in. x+118 pp.+pls. text illus. Batsford. 1950 [1951]. £1 1*s.*

Mr. Turnor calls it the 19th century architectural tragedy which, he says, 'began long ago with the insidious attack on an established and adaptable tradition by the Romantic, Rococo, and literary Gothic of Walpole and Wyatt; the abyss of misunderstanding and bad taste was reached by the followers of Pugin and Ruskin'. It is a depressing story—and more so because the writer maintains that, just as architecture in Britain was brought to convalescence by Norman Shaw, Voysey, Newton and Lutyens, it was given no chance to settle down and has had to submit to another attack from 'the engineers and moralists in steel and concrete'. He concludes his book with the words: 'it may be we can have no buildings of which a later generation may be proud—at least until out of the structural theories and mechanical moralisings there comes a return of the old-fashioned belief that architecture is an art'.

I agree with him there—even at the risk of provoking further contentious correspondence in this JOURNAL. But I cannot wholly appreciate his presentation of the Victorian period. There is such an emphasis on the classical-Gothic battle of styles at the cost of consideration of the buildings as examples of architecture in its fullest sense. Factually, it is excellent; and for a book which must necessarily be a little like a catalogue, this one is delightfully written and clearly the result of very diligent research. It should have a wide appeal, both to architects and to the general public as a study of an artistic period. One could, quite happily, give it to an intelligent aunt for Christmas.

Starting with two dates—1753, when Horace Walpole began having Gothic fun at Strawberry Hill, and 1762 when Stuart and Revett's *Antiquities of Athens* was published—Mr. Turnor builds up his history of the end of the classical tradition through Soane, Basevi, Elmes, Nash, Papworth, Burton, Cockerell and 'Greek' Thomson. He then describes the romantic assault of Gothic, followed by its religious and finally its 'respectable' aspects. He presents James Wyatt who got it going, Edward Blore and especially A. W. Pugin, with Pearson, Sir Gilbert Scott, Butterfield, Street and the disastrous Alfred Waterhouse, whose buildings are recognised, we are told, 'by their uncompromising ugliness'. Norman Shaw and Champneys just squeeze into the period; then, mingled with all this, the cleverness of Sir Charles Barry, rising above the stylistic fracas, is very neatly shown. Mr. Turnor refuses to include the greater structures in iron, like St. Pancras station roof, because he affirms that architecture is an end and engineering a means. Telford, he says, possessed an æsthetic sense; and that is why his warehouses, mills and bridges have beauty, and not because he was a great engineer. He observes with acumen that 'what is efficient is beautiful only if someone wants it so, and architecture by its very nature is not something which happens by mistake'.

This recital is much helped by 126 clear photographs. There are no plans of any building; though Mr. Turnor says that Alfred Waterhouse was a very able planner. Yet the book has value for telling us so fully who designed what through the century; and, going through all the examples, I decided there were a number we should be sincerely thankful for, whatever the fashion in which they were formed: St. George's Hall at Liverpool, unquestionably, and Cockerell's Bank of England in the same town; Basevi's Fitzwilliam Museum and his lovely Pelham Crescents at Hastings and in South Kensington. But the Houses of Parliament too; and Champneys' Rylands Library at Manchester. I should hate to see any of those destroyed; and I should go into half-mourning at least for the Leeds Town Hall, Sancton Wood's Kingsbridge Station in Dublin and George Walton's White House at Shiplake—thirty years younger and infinitely preferable to Philip Webb's Red House at Bexley Heath.

The concentration of so much in this book suggests to me that there *was* a Victorian style, neither classical nor Gothic, but quite discernible in the instances of both those manners of design. It was something innate, based very much on massive structure and most apparent in those solid warehouses near the Thames in Southwark, in Telford's St. Katharine's docks or the great flat flank of Cannon Street Station. These are like Roman buildings in their usefulness and in their look of heavy strength; and there is a reflection of this look all through the great range of building types our predecessors of last century had to tackle. I consider that one can perceive a dim pervading style in them all which echoes their heavy structural stability and a superabundance of wealth—often unhappily exposed. The fat rotundity of the Albert Hall, for instance, though it is dolled up in terracotta trimmings; or the lumbering grandeur of the Houses of Parliament and the very acreage of the Gothic ornament there; the relentlessness of that tall Ionic Order stamping round the British Museum, or the highly respectable stodginess of St. Mary Abbot's, Kensington. Even the Albert Memorial, seen in silhouette through an autumn mist, suggests—delightfully to me at least—the same unassailable permanence of wealthy rectitude, and a certain courage in its expression. A. S. G. BUTLER [*F*]

Sir John Soane 1753-1837, by *John Summerson.* (Architectural biographies *series,* iv.) 7¼ in. (45) pp. incl. front.+48 p.'s. Art and Technics. 1952. 10*s.* 6*d.*

Of the modern architects, Sir John Soane has always been the most difficult to understand. Although he was of the neo-classic school, he was not a neo-classicist. He was in fact a very rare bird among architects, a progressive. That, in itself, may explain why he was so often misunderstood by his contemporaries. For while the neo-classicists concentrated on an argument which unravelled itself back to the primitive hut, or, it may be, forward to something not dissimilar, Soane was busy with an opposite and probably equally impossible idea, the expansion of architecture.

It is therefore understandable that Mr. Summerson, who is, if I am not mistaken, a modernist inclining towards the neo-classic or historical interpretation, should feel that there is something altogether wrong about Soane. And indeed he does. He starts by saying Soane was a paranoiac and suggests that this condition accounted for the peculiarity, and what he regards as the distortion, of Soane's architecture. He then goes on to develop an argument to the effect that Soane's themes in fact originated with George Dance, and to chastise Soane for his lack of invention.

The first point, which rests on three premises—that Soane's mind and his architecture were distorted, and that the one is the result of the other—is not convincing. On the other question Mr. Summerson puts up a good case for Dance and a poor one for Soane. Nevertheless, this book will be of interest to students of Soane in that it throws new light on some aspects of his work.

RAYMOND ERITH [*F*]

Architects' Yearbook 4. *Jane B. Drew* and *Trevor Dannatt*, eds. 9¾ in. 232 pp. incl. pp. of illus. text illus. Elek. [1952.] £2 2*s*.

As a production, the current issue of the *Architects' Yearbook* defies criticism. Beautifully presented, it contains many good things, from Naum Gabo's Yale lecture on 'Constructive Realism' to 'Insulation and Thermal Conductivity' by Varming. The range includes a sharp lesson in humanistic design from Arne Jacobsen in his flats at Gentofte, some trenchant criticism of one of the new towns, and many pages devoted to the Royal Festival Hall. It is hardly the editors' fault that the last appears to carry a somewhat passé atmosphere or that one has seen it all so frequently before—through no fault of their own the last *Yearbook* was published in 1949.

To one who has a weakness for practically all yearbooks, this series, admirable in its subject-matter, consistently fails to satisfy the long-felt want. The annual cycle of architecture (and one can suppose that such a thing exists) could be recorded with more point; the New Town is a laudable idea, but a complementary article upon the architecture—at least the worst of the architecture—now being produced in our old towns (where the majority of the population has to live) would carry with it a depressing yet salutary effect. Again, buildings today are erected amid a welter of legal and economic obstruction. To clear the path, some aspects of current practice could be touched upon; a précis of Mr. Woodward's Practice Notes published regularly in the JOURNAL would prove helpful.

Such points are merely suggestions, yet a thoroughly, rounded 'annual' dealing with all aspects of the architect's work, down to the 'little things that matter' as immortalised by Mr. Edwin Gunn (things that have a nasty habit of mattering more as the years pass !) would be a great use to the profession.

Personal ideas aside, this *Yearbook* remains an achievement of quality. The price is high but these are high-priced times, and any book which carries Naum Gabo's powerful evocation of the artist's role in the modern world immediately becomes a book of great value. EDWARD PASSMORE [*A*]

Foundations for Houses and Other Small Structures, by *W. H. Elgar*. 8½ in. 92 pp. text illus. Architectural Press. 1951. 12*s*. 6*d*.

Sound, unequivocal information on this subject is badly needed, and Mr. Elgar is to be congratulated on a good attempt to get into a short book in reasonably simple terms the basic principles of foundation design for small buildings. Although he is clearly an enthusiast he writes for the general practitioner and aims to teach him, without taking up too much of his time, how to determine the nature of the ground he has to build on, what type of foundations are the most suitable for it, and how to design them so that they do the job without more expense than is really needed. He discusses the properties and peculiarities of the main types of sub-soil found in this country and the effect they may have on foundations as well as the effect foundations may have on them. And he does not overlook the difficulties associated with shrinkable clays and the agonising problem of the proximity of trees to buildings.

It is in fact a valuable book, but in some ways it is a little disappointing. The specialist's enthusiasm should be infectious, even when he is writing for the layman, and here it is not. In this context, the architect is the layman, and in his kindly anxiety to make allowances for his readers' probable scientific and mathematical limitations Mr. Elgar comes perilously near to writing down. The language is almost too simple, and we are asked to accept a good deal on trust because the explanations are too complicated for so elementary a readership. On the other hand a technical concept like the 'angle of internal friction' is introduced early on in the text (on p. 24) with a warning that it must not be confused with the 'angle of repose', but no explanation of what it is or how to find it occurs until p. 46, where it appears almost as an afterthought to a discussion of the use of the shear box.

Difficulties of this sort, combined with the merest suspicion here and there of padding ('it is desirable that a foundation on a yielding subsoil should have some degree of flexibility, and, as rafts are generally used on such soils, a reasonable degree of flexibility is very desirable'); of repetition (the formula for moisture percentage is given twice, and twice we are warned not to exceed 105 degrees C. when drying our samples); and of a somewhat remote stiffness which comes from the use of impersonal phrases like 'in the author's opinion', 'the author has seen cases of . . .' tend to make the effort of reading obscure the value of what is written. This is sad, because unquestionably much of the material is of great value, and the rule of thumb has for far too long reigned supreme in the world of foundation design.

S. MEYRICK [*A*]

English Country Houses open to the public. *Christopher Hussey*. 10¾ ins. 176 pp. text illus. *Country Life;* New York: Scribner's. 1952. £1 5*s*.

A sumptuous production in the *Country Life* tradition, this book contains photographs and concise accounts of the principal country houses in England and Wales now open to the public. So far as logic and historical evidence permit, the material is arranged chronologically. It is also most sensibly indexed.

Joinery, by *T. O. Howard*. (Teach yourself building books *series*.) 7 in. 160 pp. incl. 32 + other pls. text illus. English Univs. Press. 1951. 6*s*.

A little guide for amateurs, or apprentices hoping to become craftsmen.

Building Science, by *D. A. G. Reid*. Vol. i. 7½ in. 160 pp. + pls. text illus. Longmans. 1950. 7*s*.

A small book intended for use in the first year of a National Certificate course in building.

Building Science, by *S. C. Gibbins*. (Pitman's secondary technical building *series*.) (Book ii.) 7¼ in. x + 134 pp. text illus. Lond.: Pitman. 1949. 6*s*. 6*d*.

The second of three small volumes on Building Science for students in secondary technical schools, representing one of many subjects dealt with in Pitman's extensive and ever-expanding series.

Die Baugerüste, by *Karl Schmidt*. 8¼ in. 352 pp. incl. pls. text illus. Munich: Hermann Rinn. 1950. 33*s*. 6*d*.

Comprehensive information on all types of scaffolding currently used in Germany.

Das Eigene Heim in Einzelgrundstück, in der Plansiedlung und in der Reihe, by *Guido Harbens*. 11½ in. 191 pp. incl. pp. of illus. text illus. Ravensburg: Otto Maier. 1951. DM36.

The subject of this handsome book is the private home, by which is implied the single-family house (far less common, of course, on the Continent than here), standing on its own plot of ground or as a unit in a housing scheme or as one of a row. A large selection of examples from many countries and of all types are displayed by means of photographs and plans with brief descriptions and critical comments. Most have been illustrated before in the glossy magazines, but British readers will probably not have seen some of the German houses and will welcome the chance of finding so many collected in one volume. Generally speaking, other nations are not well represented. The choice seems to have been made with insufficient knowledge of achievements abroad. J. C. P.

Planen und Gestalten. Eine entwurfslehre, by *H. Langer*. 11 in. viii+213 pp. text illus. Erlenbach-Zürich: Verlag für Architektur. Sw. Fr. 33.30. DM32.

The author, who studied at the Technische Hochschule in Berlin under Professor Heinrich Tessenow, has had wide practical experience as an architect, and has also studied in many European countries and in America. His book summarises in simple language the essentials of sound planning with particular emphasis on housing problems. It is illustrated with a prodigious number of drawings, floor plans, details, sections, sketches and so on, which are intended to demonstrate both good and bad design. Mr. Langer writes for a wide public—the architect, draughtsman, building craftsman, student and layman—for everybody in short who may at some time in his life be involved in planning a building. J. C. P.

Experimental Building Science, by *J. L. Manson* and *F. E. Drury*. 2nd ed. Vol. 2, pt. i: Mechanics of Structures. 8½ in. Cambridge: U.P. 1950. 12*s*. 6*d*.

Volume 2 of this well-known students' textbook was published in the original 1929 edition in a single volume. It was decided that the new edition, if it was to incorporate all essential revisions and extensions, would be too bulky to form one book of convenient size. Part i, which deals with the basic principles of the mechanics of structures, has therefore been issued separately. Part ii will be devoted to the design and analysis of the principal structural units.

The Anatomy of Design. A series of inaugural lectures by Professor *N. Rodrigo Moynihan* [and others]. (Royal College of Art.) 8½ in. 103 pp. Lond. [1951.] 5*s*.

The subject matter of this book has little connection with its title. It is, in fact, a collection of the inaugural lectures delivered by the heads of schools in the Royal College of Art between November 1949 and March 1951. The lectures are not in chronological order and it is a little disconcerting, in view of what one has heard about changes at the Royal College of Art, to find that painting is still given pride of place, followed by sculpture, with dress design and architecture at the end.

All the lectures are interesting and well worth reading. The most personal, and the one which I most enjoyed, is 'The Quest', in which Frank Dobson describes his own education. Two others—'Head, Heart and Hand', by Richard Guyatt, the professor of graphic design, and 'Artifices, Confections and Manufactures' by Madge Garland, the professor of fashion design—are distinguished by their seriousness of purpose, clarity of thought and lucidity of expression. Professor Guyatt says 'The practice of art is an approach to truth. . . . It is a search to understand and to feel more deeply, to find true relationships and values . . . great works of art . . . in any medium . . . are works of understanding'. He quotes Ouspensky's view that emotions serve knowledge, that there are things and relations which can only be known emotionally. He goes on to say: 'The side of life which is understood by the emotions is the side which is illuminated by art'.

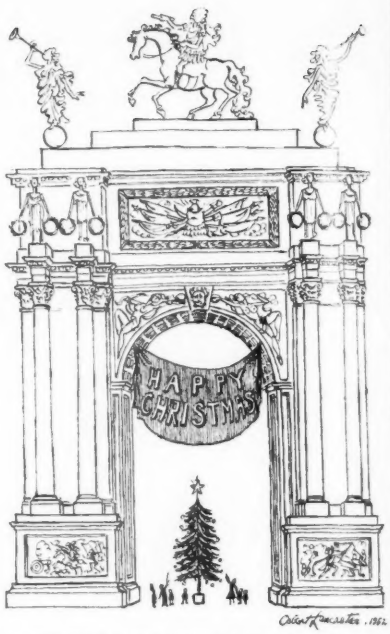
There does not seem to be any reason why we should distinguish between the arts, and say that one is of necessity more expressive than another. Yet throughout *The Anatomy of Design* one finds the old distinction between fine art and applied art. Professor Guyatt tries to explain what it is, and all through the book it appears to be taken for granted that painting and sculpture are a finer kind of art than ceramics, illustration, architecture or jewellery.

As an expression of the policy of the R.C.A., this book deserves the serious consideration of all who are interested in art education and concerned for the future of the arts.

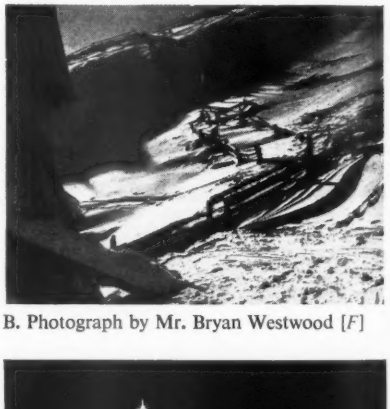
BRUCE ALLSOPP [*A*]

Building Quantities, by *James H. Anderson.* 2nd ed. 8¾ in. (i) + 206 (incl. vi) pp. text illus. Arnold. 1951. 10*s*. 6*d*.

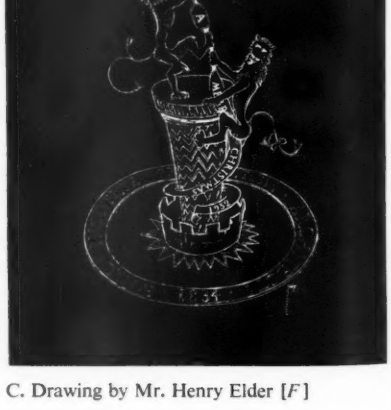
This is a new edition of a book, first published in 1946, which is mainly intended for students in quantity surveying in the early stages of their training. The author was formerly Head of the Building and Architectural Department of Woolwich Polytechnic.



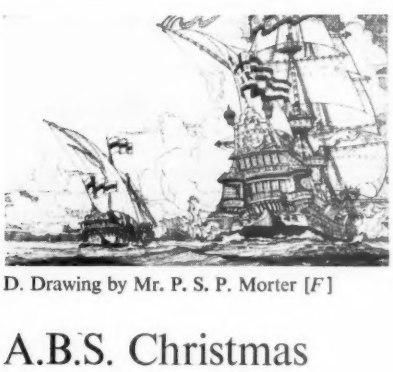
A. Drawing by Mr. Osbert Lancaster [*Hon. A*]



B. Photograph by Mr. Bryan Westwood [*F*]



C. Drawing by Mr. Henry Elder [*F*]



D. Drawing by Mr. P. S. P. Morter [*F*]

A.B.S. Christmas Cards

The illustrations are small reproductions of the photograph and drawings on the Christmas cards which have been specially prepared for sale to benefit the funds of the A.B.S. The three drawings have been specially drawn by Mr. Osbert Lancaster [*Hon. A*], Mr. Henry Elder [*F*] and Mr. P. S. P. Morter [*F*]; the photograph is by Mr. Bryan Westwood [*F*]. The cards will be 5½ in. by 4⅛ in., and the illustrations will, of course, be considerably larger than our reproductions on this page, and coloured inks will be used in the printing.

All cards cost 6*d*. each (including envelopes) in any quantity. Orders should be sent, accompanied by a cheque or postal order, to the Secretary, the Architects' Benevolent Society, 66 Portland Place, W.1, or cards may be bought for cash at the offices of the Society. There is no charge for postage of cards to purchasers.

In addition, if required, the Society will have cards printed with the name and address of the purchaser, providing orders for these are received not later than 7 December. The cards will have on the third page the words 'Greetings and Good Wishes', beneath which there will be space for a written or printed name and address. The cost of printing a name and address is £1 10*s*. for the first hundred and £1 for each additional hundred or part of a hundred. Printing of names and addresses cannot be undertaken for less than fifty cards of the same kind. The printing of names and addresses will be in the same colour and type as the words 'Greetings and Good Wishes'.

To avoid too great a last minute rush in the A.B.S. office and at the printers, intending purchasers are asked to send in their orders *as early as possible*. Points to remember: state the index letter of the design you select and the number required: send cash with order; names and addresses that are to be specially printed to be typewritten or in block letters; orders for special printing not later than 7 December, but preferably earlier; you can buy any number of cards from one upwards, but if your name and address is to be printed the order must be not less than fifty.

Last year the sale of Christmas cards, mainly at the Building Exhibition, added a substantial sum of money to the funds of the A.B.S. All architects are asked to purchase some if not all of their cards from the A.B.S. and thus to help their own charity.

The Travellers' Club

Its Building History and the Evolution of its Design

By Marcus Whiffen

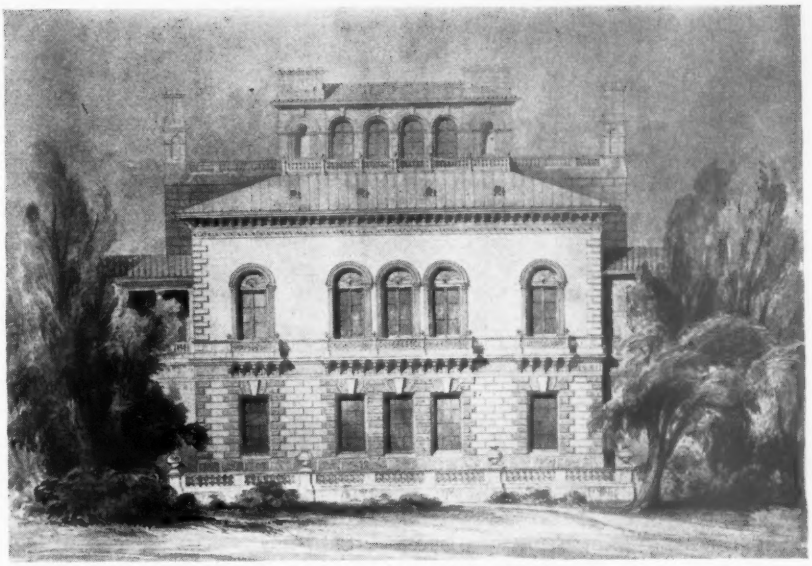


Fig. 1: Barry's diploma design of 1841 for the south (garden) front

THE HISTORICAL IMPORTANCE of the Travellers' Club, as the building with which Charles Barry introduced the astylar *palazzo* of the Renaissance into 19th century London, is generally recognised, while its architectural qualities also are such as to entitle it to a high place among the buildings of its age. Yet neither the course of events leading up to its erection nor the evolution of its design has hitherto received any attention from architectural historians, although the former is fully described in the minute books of the Club[1] and the latter can be at least partially studied in existing drawings, of which the majority are in the possession of the R.I.B.A. The purpose of this article is in some measure to repair the omission.

The story begins on 25 June 1827, which is the date of a letter from Alexander Milne, Secretary to the Commissioners of H.M. Woods and Forests, enquiring whether the Club, which was then occupying Gwydyr House in Whitehall, would be prepared to build a house of the first class on a plot of ground on the south side of Pall Mall. At a meeting of the committee of the Club three days later its secretary was directed to ask when possession could be given; the reply came that it could be given within one year of the acceptance of terms, and on 25 July the secretary was able to report to the committee that Woods and Forests had promised that they would not dispose of the ground to anyone else till after Lady Day, 1828. At the same meeting it was brought to the notice of the committee that the lease of the Duke of Buckingham's house in Pall Mall was to be sold, and the secretary was directed to write for terms. When received, however, the latter were held to be such as to 'preclude any negotiations'. Accordingly, though not until 26 March 1828, the Club accepted the site offered by Woods and Forests.

Meanwhile (1 March) the committee had ordered the printing of a proposal for building a clubhouse and its circulation among members; the total cost, including furnishings, architect's commission and legal expenses, was not to exceed £24,000, and a subscription for half that sum was to be opened forthwith. By 16 April more than £12,000 had already been subscribed; on 5 May a general meeting of the Club authorised the committee 'to procure plans from not less than five eminent architects for the new house'.

In the event, no less than thirteen architects were invited to submit designs. The first seven to be written to (by Lord Granville Somerset) were Robert Smirke, William Wilkins, J. P. Deering, William Atkinson, Decimus Burton, Benjamin Wyatt, and Lewis Wyatt; of these, Smirke, Burton and Lewis Wyatt declined. Barry was a member of the second batch, written to a week later, the others being Henry Harrison, Jeffry Wyatville and Thomas Hopper—Wyatville alone of these declining. Subsequently, Edward Blore and Ambrose Poynter were included among the competitors at the request of Mr. Fortescue and Lord Skelmersdale respectively. On 1 July eight of the nine architects who had accepted (Atkinson having dropped out) duly presented their designs. These were examined by the committee the following day, and on 14 July, after estimates had been obtained from J. H. Good, Surveyor to the Church Building Commissioners, the committee adopted the report to be laid before a general meeting, recommending that one of two courses should be followed: 'immediate selection of one design, or the setting up of a small committee with the power of selection, to confer with the architects and choose'. The general meeting, which was held on 17 July, failed to produce a quorum; but to avoid further delay the members present resolved that 'the Committee should make the necessary arrangements respecting the Architect, &c. and Report to a General Meeting early in the ensuing Season and previous to the Signing of the Contract with the Builder'. During the last days of July and the first week of August the architects explained their designs in person to the committee, and on 20 August, at a meeting attended by Lord Ashley, Lord Granville Somerset, C. R. Trefusis and C. A. Mackenzie, Barry's design was chosen.

So far everything had gone smoothly enough. It was not until December that the Commissioners of Woods and Forests coolly informed the Club that it was not in fact in their power to grant the lease of the site they had promised, because it was subject to the approval of the Treasury and, since the westernmost house upon it was being used for accommodating a part of His Majesty's domestic establishments, they (the Commissioners) could not recommend that the Club should have it. They suggested that instead of the site of the three houses numbered 105-107 the Club should take that of numbers 106-108, one house to the east and immediately adjoining the Athenæum; alternatively it might have any portion of a site occupied by six houses then being demolished further to the west.

Having done its best to hold the Commissioners to their original promise, the committee recommended to a general meeting held on 11 February 1829 the choice of the site next to the Athenæum, for which Barry had already produced the modified design necessitated by its shorter frontage (73 ft. as against 82 ft.). The recommendation was adopted; but it was nearly two months before Milne informed the Club that the Treasury had signified its approbation of the proposed lease.

It was not only in the matter of the site that Woods and Forests were to prove difficult to deal with. On 20 May 1829 the building committee heard that the Commissioners objected to the difference in level between the storeys, windows and projecting cornices of the Travellers' design and the corresponding features of the Athenæum. Barry was instructed to confer with Burton on the subject; in a letter dated 25 May he reported that he had done so and went on:

'Having considered the Effect of the dissimilarity in the external appearance of the two Club Houses (presuming that the Elevations which have been approved by the Committee for the Travellers' are carried into effect) I am clearly of opinion that as a matter of taste such dissimilarity is desirable. An intervening space of blank

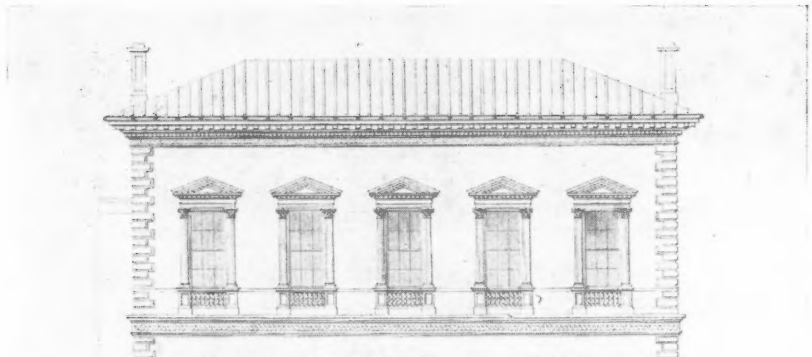


Fig. 2: The Pall Mall front as built

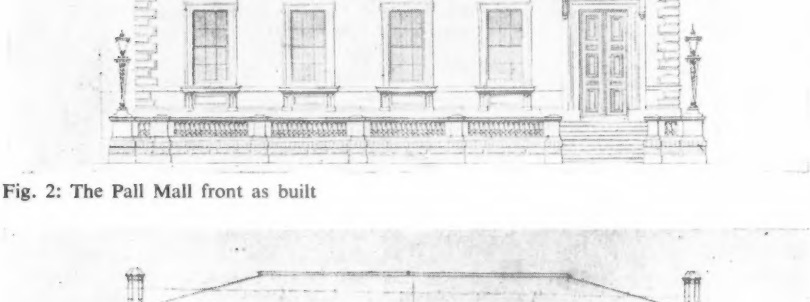


Fig. 3: The May, 1829, design for the Pall Mall front

wall between the Houses would undoubtedly improve their effect, and although the character and proportions of the Travellers' Elevation would to a certain degree suffer by any diminution of their frontage, I consider that of less consequence than allowing the two Buildings immediately to adjoin each other, and I would therefore recommend the giving up of four feet of the frontage of the Travellers' House as to external appearance in order to obtain a recess of that width, and eighteen inches in depth, according to the accompanying drawing. And I would further recommend that the back wall of such recess should not be carried to the full height of the adjoining buildings in order that their cornices may be returned upon the flank walls. The bad effect of profiling the cornices, string-courses, balustrades, &c. of each front upon the other will thereby be avoided, and much of the supposed defect in the non-accordance of the levels of the horizontal lines of the two fronts would be obviated. . . . Any lowering of the height of the Travellers' House towards Pall Mall could only be made by dispensing with the Mezzanine Story, the effect of which would be to disarrange the entire plan of the House, to do away with its greatest convenience, namely, the having the Baths and Dressing Rooms below, and in fact to render it impossible to provide in a proper manner all the accommodation required by the Club on the present limited site'.

Woods and Forests were adamant in their insistence on the reduction of the height of the Pall Mall front however, maintaining that since the Athenæum had been compelled to make the height of its building and the range of its windows correspond with the United Services on the opposite side of Waterloo Place it would not be fair to let the Travellers build higher. On 25 June the building committee gave in and sent Milne a design in which the height of each floor had been reduced and the cornice brought below that of the Athenæum. Milne replied (30 June) that the Commissioners had 'no objection to the said Design being adopted provided the Balconies to the Windows of the principal Stories be made to range with those of the Athenæum Club House'. The Club protested strongly against this condition and won their point. Nor were the Commissioners able to object to the alterations 'affecting only the Taste of the Elevations' in the design submitted after the meeting of 11 July. Later alterations recorded in the minutes included the omission of the 'smoking tower' (of which more later) in the interests of economy (2 December) and the substitution of stone quoins for stucco, together with certain unspecified changes in the design of the principal entrance and that of the south front (1 May 1830).

Of the actual erection of the building little need be said. It was carried out between December 1829 and June 1832 by H. Lee and Sons, the cost[2] being less than the original estimate; the only serious delay was occasioned by a hold-up in the supply of iron beams early in 1831. The interior was finished plainly at first. It was not until 1842-43, when the smoking tower was also added, that Sang[3] was brought in to execute more than a thousand pounds' worth of decorative painting, very little of which is to be seen today.

Having established a chronological framework in which to set them, let us now turn to the drawings. None representing the competition design is to be found: the earliest remaining to us would appear to be the two plans and two elevations pasted into a copy of *The Travellers' Club House*, by W. H. Leeds, in the R.I.B.A. library.[4] The elevations (Figs. 4 and 5) are signed by Barry and dated 4 March 1829; this design therefore must be a revised version of that made for the present site before the 11th of the previous month. The plan resembles the executed design pretty closely, though the two fronts are longer by the 4 ft. that Barry, in his letter of 25 May quoted above, recommended should be given up for the sake of separating the building from the Athenæum. The Pall Mall front, as we would expect from what we now know of the control exercised over it by Woods and Forests, is higher than that of the existing building, measuring 60 ft. instead of 53 ft. to the top of the cornice.

The many other differences between the two elevations and those of the existing building are too obvious to require enumeration. The most significant are

those affecting the garden front. According to Barry's friend, J. L. Wolfe, who had travelled with him in Italy, 'the disposition of the windows (grouped in the centre) in some of the smaller Gothic and other palaces at Venice was noted by him with approval, and was not forgotten when he was designing the garden-front of the Travellers' Club'.(5) In this design the Venetian inspiration comes out much more clearly than in the front as built, with its different scheme of fenestration and the pilasters and shell tympana to the upper floor windows.(6)

It is often said that the Pall Mall front of the Travellers' (Fig. 2) is modelled on the Palazzo Pandolfini at Florence, which Barry had seen on his travels and of which engravings were available in Famin and Grandjean's *Architecture Toscane* (first published in 1806). The March 1829 design for this front (Fig. 4), however, with its projecting balconies and its semi-circular-headed windows recessed behind the wall surface under rusticated relieving arches, shows that Raphael's building can hardly have provided the starting point for Barry's design. If one excepts the rusticated quoins as being a feature common to many other buildings, the first clear evidence of the Pandolfini's influence is to be found in the string at first floor level in our next drawing (Fig. 3), enriched here with a wave fret (as is the corresponding feature in the Pandolfini) instead of the guilloche of the executed design. This drawing, which belongs to the Club, was approved and signed by the three original members of the building committee(7) on 4 May 1829. The date is surprising, because Woods and Forests had not by then, so far as we can learn from the minutes, objected to the height of the proposed front, which has nevertheless been reduced in this drawing to that of the front as built. On the other hand the breadth of the front is still the full 73 ft. of the site, which indicates that the date is not due to a slip of the pen.

No intermediate stages between this design and the executed one are known to me, unless two elevations(8) which show slight variations affecting the chimneys, balustrades and garden front rustication are to be counted as such. Fig. 1, far from being a preliminary design, shows the building as it was finally completed, in 1843, by the addition of that ingenious feature, already mentioned, whose purpose was to enable members to indulge a weakness for tobacco without polluting the air of the principal rooms—the smoking tower. There can be little doubt but that the tower on the garden front of the March 1829 design (Fig. 5) was to contain a smoking room; we have seen that the need for economy prevented the building of a smoking tower in 1829-32. Most people who view the Travellers' Club from Carlton Gardens today probably do not realise that this belvedere-like structure (no longer used for its original purpose, need one add?) was not only added by Barry himself but that it or something like it was intended from the first. The fact that Fig. 1 was Barry's Royal Academy diploma work(9) suggests that the architect himself regarded it as the crowning feature, in more than one sense, of what always remained one of his favourite buildings.

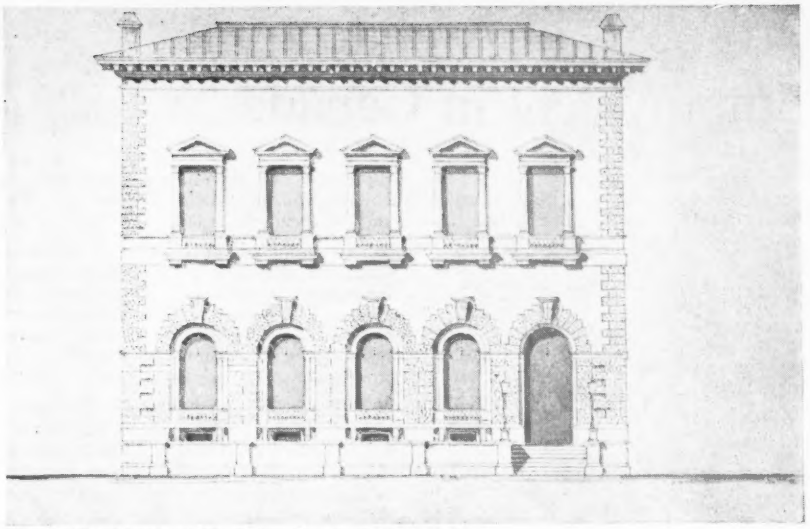


Fig. 4: The March, 1829, design for the Pall Mall front

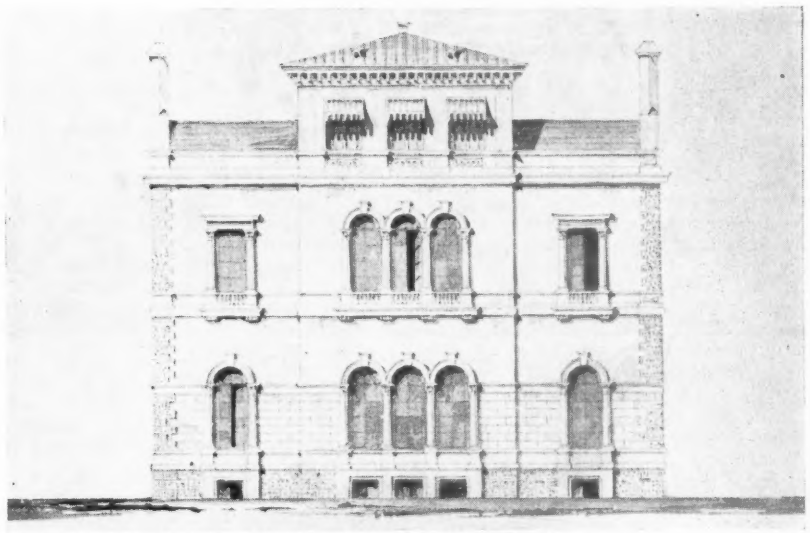


Fig. 5: The March, 1829, design for the south (garden) front

(1) I am much indebted to the Committee of the Club for permission to inspect the minute books, and to the Secretary, Mr. R. P. McDouall, for the help and facilities he afforded me when doing so.

(2) The cost of the building exclusive of fittings and furnishings was £19,327 7s.; architect's commission was £1,471 13s. Total cost including furniture was something under £31,000.

(3) Sang also worked in the Conservative Club, the Haymarket Theatre, and the London Coal Exchange. THE BUILDER was enthusiastic about his decorations in the temporary building at the back of the Institution of Civil Engineers erected for President Rennie's *soirée* on 24 May 1845 (Vol. III, p. 259). For an extremely unfavourable critique of his work at the Travellers', see *The Athenæum*, 12 August 1843, p. 737.

(4) This volume was presented in 1918 by A. O. Collard, to whom it had been given by Sydney Smirke, F.R.I.B.A., eldest son of Sydney Smirke, R.A. The drawings, in pen and wash, are sixteenth scale.

(5) Quoted by A. Barry, *Memoir of the Life and Works of Sir Charles Barry*, p. 51.

(6) Grouped windows had, of course, been much used by French architects for some years past. But I suspect that his own Italian experience counted for more with Barry than either French examples or French books on Italian architecture, such as Gauthier's *Les Plus Beaux Edifices de la Ville de Gènes et de ses Environs* (1819), Schuelt's *Recueil d'Architecture Dessiné et Mesuré en Italie* (1821), and the volume by Famin and Grandjean mentioned below.

(7) Lord Granville Somerset, Lord Churton, the Hon. Edward Cust.

(8) R.I.B.A., C6/4 and C6/6.

(9) The drawing is reproduced by courtesy of the Royal Academy of Arts. I have to thank Mr. Sidney C. Hutchison for getting it photographed for me.

Prospects of Architectural Employment in Canada

DURING HIS VISIT to Canada in April of this year the Secretary of the R.I.B.A. enquired about the prospects of practice and salaried employment in the various provinces of the country for architects emigrating from the United Kingdom. In response to these enquiries, he has received the following information from Mr. C. J. C. Carroll, Executive Director of the Royal Architectural Institute of Canada. Mr. Carroll says:

Architectural Practice and Employment in Canada

'1. This letter endeavours to answer the questions of personal enquiries made to this Institute from those who are considering coming to Canada from the United Kingdom, Europe and other countries.

'2. The country of Canada is divided into ten provinces. The practice of architecture in Canada is governed by regulations set up by the laws of these ten provinces.

'3. For example, an applicant who wishes to become an architect and practise architecture in Canada does not join the Royal Architectural Institute of Canada. He makes application for registration in the province in which he wishes to practise. If and when this application is accepted, the applicant becomes a member of that provincial Association, and then automatically becomes a member of the R.A.I.C., the parent-body of all the provincial Associations. Therefore, applications and correspondence about registration should be directed to the Secretaries of the Provincial Associations.

'4. The Royal Architectural Institute of Canada does not maintain an employment service, for the reason given in Para. 3 above.'

'5. Associateship in the R.I.B.A. is definitely recognised and considered by the Provincial Architectural Associations in Canada, in assessing the qualifications of applicants. These applicants generally are asked to take an examination in Professional Practice, because of the different conditions prevailing in Canada. Generally when applicants have partly qualified in the R.I.B.A., it is recommended that this course be completed, if possible, before coming to Canada.

'6. There are five schools of architecture in Canada, and those who are interested in details of their courses should write to the Director of these schools at: University of Toronto, Toronto, Ontario; University of Manitoba, Winnipeg, Manitoba: University of British Columbia, Vancouver, B.C.; McGill University, Montreal, Quebec; Ecole des Beaux Arts, Montreal, Quebec.

'7. The Government of Canada, through one of its agencies, the Unemployment Insurance Commission, maintains a National Employment Service in the various areas of Canada.

'8. An employment circular concerning architects, prepared by the Unemployment Insurance Commission in conjunction with the R.A.I.C. is set out below. The addresses of the various offices of the Unemployment Insurance Commission are listed in this circular.

'9. The housing situation in Canada, as in most countries today, is acute. Those who are considering coming to Canada should make their own enquiries about housing or they should be prepared to leave their families behind until they can secure accommodation.'

The circular referred to in Mr. Carroll's letter is as follows:—

Canada Unemployment Insurance Commission, Ottawa.

5 *May* 1952.

Employment—General Information about the Architectural Profession. *Circular No.* 28-32.

1. The architectural profession in Canada today is in a very unsettled condition owing to many circumstances.

The Defence Programme, although well advanced, is still causing shortages in essential materials and skilled mechanics. Restrictions on building caused by the shortages are definitely affecting the architectural field.

2. As to the prospects for the newcomer on the scene, it is but fair to point out both the possibilities and the difficulties.

3. The five Canadian schools of architecture are graduating a considerable number of students. These students, after further training under practising architects, will eventually establish offices of their own, thus fulfilling normal population growth.

4. It must be pointed out that Canadian practice follows American rather than English practice, and therefore both architects and architects' assistants emigrating to Canada must be prepared to adapt their background of knowledge and competency to conditions which will have to be thoroughly assimilated if the newcomer expects to succeed.

5. The conditions referred to include building methods, unfamiliar materials, presentation of drawings and details, the law as it affects architects and building contracts, details of construction as developed to meet climatic conditions, the relation of the architect and the contractor—all of which differ in whole or in part from English practice. Knowledge of such things can, of course, be gained by enrolment in one of the five architectural schools, but for the practitioner already qualified in another country the only practical way to gain sufficient experience of Canadian requirements to qualify for practice in Canada is to work under a Canadian architect.

6. Opportunities for the right persons are without doubt present in Canada, but this opinion must be qualified by the warnings before mentioned.

7. The choice of location is something which only experience and temperament can determine. No country on earth offers a wider choice of climate and amenities.

8. In the final analysis, ability, character, hard work, and a faculty for adjustment are the requirements for success in the practice of architecture in Canada, as in every other field.

9. In all Canadian provinces the practice of architecture is governed by regulations set up under provincial law. There are variations in such laws as between provinces.

10. It is therefore suggested that architects holding certificates to practise in other parts of the Empire should make preliminary inquiry as to their status, if proposing to settle in Canada. Such inquiry should be addressed to the secretary of the association of the province in which one intends to settle.

11. The matter of remuneration is a difficult one on which to give information. The income of an architect setting up his own office is entirely dependent on his own ability and assiduity. It can be said that, once established, well qualified architects earn good incomes in comparison with other professions. While gaining experience of Canada, it should be possible to obtain employment as an architectural or structural draughtsman at a salary dependent entirely on experience and ability. In the Dominion Government Service salaries for architects range from $3,120 to $7,200 per year. Salaries for draughtsmen are covered in Employment General Information Circular No. 28-17.

12. This material has been concurred in by the Royal Architectural Institute of Canada.

13. It is suggested that any applicant qualified in the aforementioned profession should register at the nearest executive and professional office of the National Employment Service (UIC) on arrival in Canada. The addresses of these offices are: *Maritime Region*—Moncton, N.B. Dominion Government Building ('Phone 9105). *Quebec Region*—Montreal, Quebec, 10 Notre Dame Street, E. ('Phone GL-5781). *Ontario Region*—Toronto, Ontario, 200 Bay Street ('Phone EM 3-3841). *Prairie Region*—Winnipeg, Manitoba, 436 Main Street ('Phone 928-171). *Pacific Region*—Vancouver, B.C., 1155 Robson Street ('Phone PA-8253).

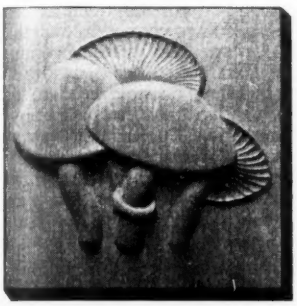
(*Signed*) S. H. McLAREN,
Executive Director.

Panelling presented by Great Britain to The United Nations Building, New York

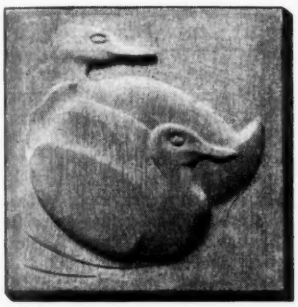
Sculptor of carved panels: John Skeaping, A.R.A.

Architect: C. Terry Pledge [*A*], Ministry of Works

Consulting Architect: Howard Robertson, M.C., A.R.A., P.R.I.B.A.



Her Majesty's Government is presenting to the United Nations the panelling and furnishings of one of the committee rooms in the headquarters building. The English oak panelling which is natural colour and waxed polished is designed with horizontal bolection moulded panels alternating with square fielded panels, the latter bearing carved motifs of British fauna and flora. There are 84 of these panels, all designed and worked by John Skeaping, A.R.A. The panelling was made by Messrs. Green and Vardy. The furnishings include tables and chairs in English oak and a green close-fitted super-saxony Wilton carpet. The tables consist of an elliptical delegates' table seating 34, a secretariat table seating eight, and a conference officers' table. The armchairs for the delegates and 28 small chairs are covered in blue hide.



Review of Construction and Materials

This section gives technical and general information. The following bodies deal with specialised branches of research and will willingly answer inquiries.
The Director, The Building Research Station, Garston, near Watford, Herts.
Telephone: Garston 2246.
The Officer-in-charge, The Building Research Station Scottish Laboratory, Thorntonhall, near Glasgow.
Telephone: Busby 1171.
The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks.
Telephone: Princes Risborough 101.
The Director, The British Standards Institution, 28 Victoria Street, Westminster, S.W.1.
Telephone: Abbey 3333.
The Director, The Building Centre, 26 Store Street, Tottenham Court Road, London, W.C.1.
Telephone: Museum 5400 (10 lines).
The Director, The Scottish Building Centre, 425-7 Sauchiehall Street, Glasgow, C.2.
Telephone: Douglas 0372.

Steel Economy Bulletin. Following the publication by the Ministry of Works of their report on economy of building materials, of which a summary appeared in last month's JOURNAL, the Ministry have now issued their *Steel Economy Bulletin No. 1, The Design of Buildings*. The introduction refers to the present shortage of steel and the difficulties arising from the balance of payments, as most of the raw material is imported and additional supplies of foreign steel have had to be purchased, whereas the need is for expansion in the export of engineering products. The utmost value must therefore be obtained for every ton of steel put into a building.

The Ministry of Works hope that when local authorities are approving designs under the bye-laws they will have full regard to the recommendations in the bulletin, and in future the Ministry will examine licence applications for new buildings in the light of the recommendations of this and any later relevant bulletin, and will normally require a certificate by the architect or the engineer that the recommendations have been fully taken into account.

The following are brief summaries of some of the recommendations that most closely affect the architect, the others being directed to the technical details of the structure.

Design of framed buildings generally. Avoid uneconomical lay-outs involving long spans. Multi-storey framed buildings should, as far as possible, be planned to a regular grid, thereby standardising dimensions. Grid dimensions should use spans of the most economical length, that is, the best compromise between keeping beams short and reducing the number of vertical supports to a minimum, but foundation problems should be borne in mind. Allow adequate depth for slabs and beams, as arbitrary restriction of floor thicknesses results in unnecessarily heavy reinforcement or steel sections.

Design principles. Full advantage should be taken of the principle of continuous and interdependent construction, including semi-rigid and fully-rigid design. When increased deflections can be accepted beams and other members should be designed by stress criteria only. Stanchions and beams encased in structural concrete should be designed to act as composite sections. Steel grillage stanchion foundations should be avoided in favour of mass or reinforced concrete foundations. In large structures the use of the principle of prestressing to reduce secondary effects should be considered. In a main tension boom savings may be made by prestressing with auxiliary high tensile wires. Vierendeel construction is wasteful in steel, and should be avoided in favour of braced frames.

Materials and methods. High tensile steels can effect savings in steel, particularly in beams. Tubular members save steel by comparison with normal hot rolled members for braced frames, and should be used wherever practicable. Open webbed beams and stanchions of the castellated or other welded types can save steel. Cold-formed members use less steel than hot rolled members for light frameworks, especially in standardised construction of moderate dimensions, but attention must be paid to protection from corrosion. Welding can lead to economies and should be used wherever possible. Filler joist floors should not be used if avoidable; if used, they should be designed as composite construction, even in cases where the fillers are not completely embedded. Continuous shelf angles should not be used.

Reinforced concrete design. High tensile or cold worked steel, at stresses 50 per cent above those allowable for mild steel, can be substituted for mild steel in beams without modification of the concrete section. In the hands of experienced designers a tensile stress of 20,000 lb. per sq. in. for mild steel bars is reasonable, and up to 30,000 lb. per sq. in. for cold worked bars. In normal reinforced concrete continuous construction should be used where rigid foundations are assured. Steel and cement can be saved by using prestressed concrete in suitable cases. Some steel economy may be possible by the use of higher strength concrete in columns.

Loading. The position and construction of partitions should be ascertained and the structure designed to carry their computed weight, instead of using the general allowances for partitions set out in B.S. 449. The maximum use should be made of lightweight construction for partitions, roof, etc., to reduce dead weight.

Assistance of wall panels and floor slabs. Structural assistance can be given by wall panels and floor slabs in framed buildings by using them instead of bracing or portal action for resisting racking forces.

Substitution of other materials for steel. In any particular design problem factors other than the amount of steel involved may have to be considered, such as cost, manpower, time of erection or construction, need for adaptability to accommodate changing industrial needs during the life of the building, possible need to dismantle and move, and availability of alternative materials. Subject to the above, for single-storey and shed type buildings reinforced and prestressed concrete should be used as much as possible for roof spans, etc. Load-bearing brickwork or stone should be used for vertical supports where practicable. Consideration should be given to a departure from the conventional practice of limiting the resultant thrust to the middle third of the section and to a closer approach to the safe working strength of the brickwork or masonry in compression. Where brickwork or stone is not practicable, concrete (reinforced if necessary) should be used for vertical supports where possible. The use of corrugated steel sheeting should be avoided.

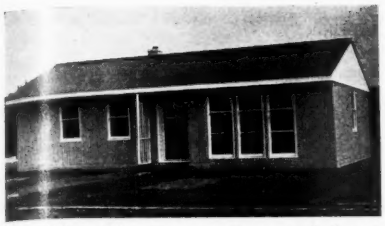
In multi-storey buildings steel can be saved by the use of load-bearing walls and piers in buildings of moderate height (up to four storeys). Where a framed building is necessary reinforced concrete construction, rather than steel framing, should be considered. Prestressed concrete should be used wherever possible for floor slabs and beams.

Foundations. Foundation slabs should generally be thick and of simple design in order to use the least amount of reinforcement. Prestressed concrete piles should be used rather than reinforced concrete where suitable.

The bulletin can be obtained from H.M.S.O., price 3*d.* net, Code No. 67-9999.

Site Records for Builders. From time to time the Ministry of Works have published booklets on programming and progressing dealing with various types of building and civil engineering contracts, a subject that both the Building Industry Working Party and the Anglo-American Productivity Team stressed as being of importance as a means of improving production and lowering costs in the building industry. The Ministry of Works have now amplified the material in the previous publications in a document entitled *Site records for builders. 1. Programming and progressing for traditional house building.*

Part I outlines five alternative methods of programming and progressing from the simplest progress record to a comprehensive programme for the estimation and progressing of labour, material and plant



The Riley-Newsum prototype 3-bedroom Canadian house

requirements. Part II deals with the programming of work where heavy mechanical plant is employed and instances the use of a mobile crane on a traditional housing site for speeding completion of the work and making savings in man-power and money. Part III deals with schedules of operations and units of measurements.

The document is published by H.M.S.O., price 3*s.* net; the code number being S.O. 67-16.

The Riley-Newsum House for Canada. In the June 1951 JOURNAL an account was given of the Riley-Newsum house for which a contract from the Australian Commonwealth had been secured by Messrs. H. Newsum Sons and Co. Ltd., of Lincoln. The company have now obtained an order from the Central Mortgage and Housing Corporation of Canada, which is the Federal Government Housing Authority, for 28 houses, an order which it is hoped will be extended.

This Canadian house has been designed, after discussions with the C.M.H.C., to suit Canadian conditions and requirements, and four types have been prepared; a two- and a three-bedroom house, each with and without a basement. The basement would contain a heating system with ducts leading to grilles in the rooms. The houses have been designed on a 3 ft. 4 in. module and are factory-made with external wall panels of timber clad with V-jointed vertical weatherboards, waterproof building paper, air space (which can be filled with glass-wool if required), and lined internally with plasterboard sheets. Roofs employ Messrs. Newsum's system of folding roof trusses, for economy of space in crating, normally covered with aluminium sheet, and provided with glass wool between the ceiling joists if desired. Internal panels are timber-framing lined both sides with plasterboard.

On 3 September the Minister of Works, the Rt. Hon. David Eccles, M.P., attended a demonstration at Messrs. Newsum's premises of the speed with which these houses can be erected; in this case on ready-prepared timber plates, simulating the normal Canadian concrete raft. At 8 a.m. Mr. Eccles gave a signal and ten men started erection of a two-bedroom type house; at 4.10 p.m. the shell was erected, 50 minutes ahead of schedule, and all that remained to be done was the connection of the fittings to the drains and water supply, the electrical installation, and decorations. Mr. Eccles also opened a

Plan of the Riley-Newsum prototype 3-bedroom Canadian house

finished and furnished prototype three-bedroom house, which is illustrated here.

Owing to the higher cost of Canadian labour these British factory-built houses can be erected in Canada for less than a house of similar size constructed traditionally.

Albi-'R' Fire Retardant Coating. Under this name Messrs. Albi-Willesden Ltd. market a product that has the property of stopping the spread of fire and of limiting the penetration and transmission of heat to the material protected. It is a chemical product that dries to a hard white non-chalking finish. When exposed to flame or heat over 300 degrees F. it swells and forms a thick black protective and insulating mat which effectively stops the spread of fire. It is designed not only for use on combustible surfaces such as wood, plywood, insulation board, hardboard and acoustic tiles, but also on non-combustible materials, for instance, plaster, plasterboard and non-protected metals. It can be applied by brush, or preferably by spray, and it can be tinted. Accelerated ageing tests indicate that the coating will retain its fire-retardant qualities for at least 12 years.

Albi-'R' can be used over painted surfaces, and paints or enamels may be applied over it without affecting its fire-retardant qualities. The normal coverage is 1 gall. to 30 sq. yd., and the present price is 45*s.* per gall. in 5 gall. containers, or 47*s.* 6*d.* in 1 gall. cans. In most cases one coat is sufficient, but acoustic tiles need two coats; in the case of plywood and timbers one coat of oil-based primer is recommended, and one coat of red lead or chromate primer for metals.

A special investigation was carried out by the D.S.I.R. and Fire Offices' Committee Joint Fire Research Organisation, and the result put Albi-'R' into class 1, surface of very low flame spread, which means that not more than 6 in. mean spread occurred; indeed, in several cases there was no spread at all.

For full details and recommended treatment of surfaces to be coated application should be made to Messrs. Albi-Willesden Ltd., of Kensington Palace Mansions, De Vere Gardens, London, W.8.

Illuminating Engineering Society. The 1952 list of over 200 I.E.S. members included on the register of lighting engineers maintained by the Society has been published. Inclusion on the list implies that the member has satisfied the conditions of theoretical and practical training, and has had a specified period of practical experience in the design of lighting installations. Copies of the list may be had from the I.E.S. at 32 Victoria Street, London, S.W.1.

Codes of Practice Recently Published. C.P. 3. Chapter V (1952). **Loading.** This Chapter is a revision of that published in 1944. Contents: loads recommended to be taken into account in the design of buildings, including dead load, imposed floor loads, stairs, landings and cantilever access balconies, imposed roof loads other than wind loads, wind loads on a building as a whole, wind pressure on walls and roofs, chimney shafts and projections above roof level. Appendices give explanatory notes on dead and imposed loads, parapets and balustrades, and wind loads. Diagrams illustrating wind pressures on buildings. Obtainable from the British Standards Institution, 24 Victoria Street, London, S.W.1, price 4*s.*, post free.

Notes and Notices

NOTICES

R.I.B.A. Distinction in Town Planning

The R.I.B.A. Distinction in Town Planning is by conferment only, and is limited to Fellows, Associates and Licentiates of the R.I.B.A.

The Distinction is the highest award in Town and Country Planning that the R.I.B.A. can bestow. It is solely intended for members of the R.I.B.A. who have made an outstanding contribution in the field of large scale planning. Recommendations are submitted to the Council by a Standing Committee set up for the purpose.

Personal applications by candidates will not be entertained; the name of a candidate must be submitted by three sponsors, themselves members of the R.I.B.A., who will be required to submit the following particulars on behalf of the candidate:

(*a*) Details of professional qualifications and experience;

(*b*) Evidence of his work and experience, such evidence consisting of a list of the candidate's work, together with references to professional journals in which the works have been illustrated; and such other evidence as may assist the Committee in making their recommendation to the Council.

Nominations should be made twice annually on 1 March and 1 November, and should be addressed to the Secretary, Royal Institute of British Architects, 66 Portland Place, London, W.1.

Members upon whom the Distinction has been conferred will be entitled to use the designation 'R.I.B.A. Distinction in Town Planning', and it is advised that this should be used in full, or the initials 'R.I.B.A. Dist.T.P.' after the initials F.R.I.B.A., A.R.I.B.A. or L.R.I.B.A., according to the class of membership to which they belong.

BOARD OF ARCHITECTURAL EDUCATION

The Final Examination, June 1952

The Final Examination was held in London, Birmingham, Leeds, Manchester, Newcastle and Belfast from 18 to 27 June 1952.

Of the 438 candidates examined, 141 passed as follows:

Passed Whole Examination	88
Passed Whole Examination, subject to approval of Thesis	22
Passed Part 1 only	31
	141

297 candidates were relegated.

The successful candidates are as follows:

Whole Examination

Allen, Rodney J.
Allen, William J.
Ashenden, Jeffrey
Bacon, Kenneth W.
Baker, Elsie E. (Miss)
*Balcombe, George H.
Banks, Keith G.
*Banting, Peter
Banwell, George E.
Bishop, Alan C.
Blee, Michael J.
Blyth, David G.
Bonwick, Henry
Boots, Maurice P.
Bottomley, Derek S.
*Bowden, Derek L.
Briggs, Granville E.
Brown, John H.
Buckingham, Michael V.
Buzuk, Jerzy P.
Carpenter, Eric C. T.
*Cavell, Martin H.
Chapman, Robert G.
Clist, Trevor W.
*Corder, Donald M.
Cornelius, Sydney K.
Cousins, Michael T. R.
Crofts, Frederick A.
Crofts, Vernon W.
*Cross, Charles B.
Davidson, William M.
Doshi, B. V.
Dunthorne, Philip B.
Eagles, Frank I.
Edmonds, Michael L.
*Ellmers, Jack W.
Ely, Eric A.
Farley, Peter J.
Finney, Peter L.
*Fiske, Herbert P.
Fullman, Geoffrey M.
Gadd, Frederick J.
Good, Robert (Distinction in Thesis)
*Gotch, Christopher L.
Gowings, Peter R. C.
Greenwood, Patricia K. (Miss)
Grisley, June R. (Miss)
Grunberg, Roman
Hall, Gordon D.
Hance, Dennis R.
Hartry, Edward H.
Hawkins, Donald
Hendon, Donald O.
Heuvel, Desmond J.
Heyward, Harold (Distinction in Thesis)
Heywood, John H.
Hill, Reginald G.
Hopkins, Phillip (Distinction in Thesis)
Hurst, Maurice
James, Alan E.
*Jamieson, William B. R.
Jedwab, A. J.
Jefcoate, Derek R.
*Kilner, Allen
Kimmins, Barry J.
Mainstone, Keith L.
Martin, William A.
*Matcham, Alan E.
Miles, Douglas W.
Misselbrook, Sydney A.
Morris, Valerie J. (Miss)
Moss, Michael F. H.
Myner, Dennis G. C.
Noak, Hans H.
Nock, Colin A. H.
Palmer-Renton, L. V. L.
*Phillips, Peter H. F.
Powell, Gilbert
Powls, Harry
Rendle, Timothy J.
Rice, Anne K. (Miss)
Roberts, Stanley L.
Robson, Roma A. (Miss)
Sadler, Raymond A.
Sass, Jonathan
*Schofield, Frederick B.
Small, Donald C.
*Smith, Arthur Walter
*Smith, Charles K. G.
Smith, Colin John S.
Smith, Kenneth Horwood
Smith, Kenneth Middleton
*Smith, Robert
Solarski, Antoni
Stanworth, James W.
*Sutcliffe, Ernest E.
Thimbleby, Peter
Thomas, Henry A. C.
Thorpe, Anthony W.
Toohill, Leonard
Towns, Ann M. L. H. (Miss)
*Turner, Maurice W.
*Waddington, Samuel
Walls, Lawrence E.
*Waskett, Arthur H.
*Watson, Laurence E.
Watt, Donald M.
Will, Oscar E.
Wilson, Geoffrey (Distinction in Thesis)
Yeats, Robert M.

*Subject to approval of Thesis.

Part 1 Only

Bennett, Geoffrey B.
Bloomfield, Anthony J.
Cannon, Geoffrey L.
Child, Edmund H. G.
Crawforth, Norman D.
Dalton, David J.
Daw, Rodney N.
Dzwonnik, R. R.
Fairbairn, Kenneth S.
Field, David R.
Gray, Robin F.
Grist, Michael W.
Hammond, Colin E.
Harper, James W.
Hartley, Brian
Jennings, George M.
Jones, Leonard D.
Kimber, John
Latimer, James R.
Orlowska, Jadwiga (Miss)
Owen, Robert E.
Pearce, Roy C.
Riseley, Raymond F.
Rounsley, Allan C.
Sewart, Jack S.
Sliwa, Jan A.
Smith, Matthew F.
Stephenson, Robert
Swallow, Ronald W.
Willoughby-Thomas, Mervyn B.
Wolpert, Donald B. J.

The Special Final Examination, June 1952

The Special Final Examination was held in London, Birmingham, Leeds, Manchester, Newcastle and Belfast from 18 to 27 June 1952.

Of the 374 candidates examined, 83 passed (17 in Part 1 only). 291 candidates were relegated.

The successful candidates are as follows:

Whole Examination

Allen, Robert C.
Anderson, Albert N.
Bailey, George F.
Baker, Albert J.
Banister, Robert
Bass, Edward V.
Beckett, Adrian G.
Beckett, Sir Martyn
Bevan, Leslie
Bilton, George K.
Bolton, Brian H.
Bonfield, William J.
Bretman, Victor
Cater, Charles R.
Concanen, George V.
Cox, Frank
Curtis, Leonard J.
Davies, Hugh L.
Donaldson, Francis
Dowse, Charles E.
Dracup, Perceval L.
Drowne, George W. J.
Eames, Edward H.
Ellwood, George
Farrow, Dennis G.
Field, Eric J.
Ford, John R.
Foster, Christopher H.
Fullerton, Peter
Grasby, James
Greenway, Robert E.
Hart, Kenneth R.
Harvey, Frederick E.
Herz, Rudolf
Howells, P. L.
Hurley, Harold M.
Hurst, Miriam (Mrs.)
Jackson, Charles W.
Judd, George W.
Knight, Geoffrey S.
Lewin, Frederick A.
Ley, Frank
Marsh, Walter
Marshall, Francis R.
Mayer, Victor C.
Montgomery, Joseph
Newton, Vaclav
Nixon, Ernest J. B.
Parry, Gilbert H.
Pettit, Claude F.
Pike, Morris W.
Pittendrigh, Hector B.
Pradhan, B. M.
Robinson, Kenneth H.
Simmonds, Maurice F.
Snowden, John H.
Stephens, John T.
Talbot, Edward R.
Thomas, Berwyn H.
Thorndyke, Arthur E.
Toner, Charles
Trevett, George A.
Whitehorn, Raymond
Whitmore, Frederick W.
Willems, Denis
Wilson, Hubert F.

Part 1 Only

Albiston, Anthony W.
Bagguley, Reginald W.
Cuthbert, Ernest W.
Ellison, Thomas A.
Goodwin, Maxwell F.
Gulwell, Wallace
Kozik, M. J.
Leonard, Hugh H. A.
Millar, Walter
O'Rourke, John
Payne, Charles E.
Poole, Michael R. L.
Potter, Richard J.
Rhodes, George L. H.
Robinson, Lloyd J.
Rogers, Leonard
Weaver, Lionel J.

The following candidates have also passed the Special Final Examination:

Dallow, John G.
Falkus, Donald T. F.
Jameison, David L. E.
Simmons, Roger G.
Slattery, Lawrence T.
Vick, Francis N. H.

COMPETITIONS

Dow Prize Competition

The Illuminating Engineering Society offers a prize which will be awarded to the winners of a competition intended to encourage collaboration between students of illuminating engineering or of those branches of engineering concerned with illumination, and students in other fields in which applied lighting plays an important part. While entries from individuals are not excluded, the competition is primarily intended for students (under the age of 26) working in collaboration. The competition will be set and judged by a panel of Assessors appointed by the Society in co-operation with the R.I.B.A. and the Institution of Electrical Engineers.

Premium: £75 (and a certificate to each member of the winning team).

Certificates of commendation will be awarded to any other entries of outstanding merit.

Last day for submitting designs: 30 November 1952.

Relevant documents with instructions as to the form which entries should take and forms of application may be obtained from the Secretary of the Illuminating Engineering Society, 32 Victoria Street, London, S.W.1.

Changes of Officers and Addresses

Birmingham and Five Counties Architectural Association. Joint Hon. Secretaries: J. S. Scott [*A*] (as previously) and G. M. Harper [*A*]. Communications to be addressed to the Hon. Secretaries, Birmingham and Five Counties Architectural Association, 8 Newhall Street, Birmingham.

Essex, Cambs and Herts Society of Architects. Colchester and District Chapter: Chairman, A. W. Lawson [*A*], 34 Nelson Road, Lexden, Colchester. *West Essex Chapter:* Chairman, H. D. Matthew, M.B.E., M.C. [*A*], Midland Bank Chambers, Buckhurst Hill, Essex.

Hampshire and Isle of Wight Architectural Association. Central Chapter: Hon. Secretary, K. G. Brooks [*L*], c/o Messrs. Pink and Arnold, Westgate Chambers, Winchester.

North Staffordshire Architectural Association. Secretary (for communications), G. E. Shenton, c/o Guy S. Pearce, Esq., 2 Lonsdale Street, Stoke-on-Trent.

North Wales Architectural Society. President, Leonard Moseley, F.R.I.C.S. [*L*], c/o The Estate Office, Colwyn Bay, N. Wales.

South-Eastern Society of Architects. Address of the Hon. Secretary, Colin H. Murray [*F*], for correspondence is now 9 Halsey House, 13 Red Lion Square, London, W.C.1.

Croydon District Chapter: Hon. Secretary, Charles Sykes [*F*], 35 Oakwood Avenue, Purley, Surrey.

Brighton District Chapter: Hon. Secretary, F. E. Green [*A*], Brighton College of Art and Crafts.

Gloucestershire Architectural Association. President, R. W. Paterson, A.M.T.P.I. [*A*], Church House, College Green, Gloucester.

West Yorkshire Society of Architects. Huddersfield Branch: Joint Hon. Secretaries, Norman S. Lunn [*A*] (as previously) and E. Austin Johnson [*A*], 18 King's Head Buildings, Cloth Hall Street, Huddersfield.

Natal Provincial Institute of Architects. President, R. C. C. Bennett [*A*], 4-6 Royal Exchange Buildings, Smith Street, Durban, Natal, South Africa.

Orange Free State Provincial Institute of Architects. President, K. E. Bull, P.O. Box 491, Bloemfontein, O.F.S., S. Africa. Hon. Secretary, P. Visser, P.O. Box 1072, Bloemfontein, O.F.S., S. Africa.

Transvaal Provincial Institute of Architects. Secretaries, The Associated Scientific and Technical Societies of South Africa, 611 Kelvin House, 75 Marshall Street, Johannesburg, S. Africa.

Institute of Southern Rhodesian Architects. President, C. Ross MacKenzie, M.C., B.Sc., B.Arch. [*A*], Messrs. Ross MacKenzie, van Heerden and Hartford, 17 New Africa House, Union Avenue, Salisbury, S. Rhodesia.

Royal Australian Institute of Architects. Tasmanian Chapter: President, S. W. T. Blythe [*A*], 73 Murray Street, Hobart, Tasmania.

Royal Architectural Institute of Canada. Hon. Secretary, Douglas E. Kertland, 34 Summerhill Gardens, Toronto, Ontario.

Architectural Institute of British Columbia. Hon. Secretary, Keith B. Davison, 101-2376 West Broadway, Vancouver 3, B.C., Canada. Secretary, R. B. Deacon, 520 Shelly Building, Vancouver 3, B.C.

Manitoba Association of Architects. President, Prof. John A. Russell, Director, The School of Architecture, University of Manitoba, Fort Garry, Manitoba, Canada. Secretary-Treasurer, Mrs. Douglas Chevrier, 3 Kingston Row, St. Vital, Manitoba.

Nova Scotia Association of Architects. President, C. D. Davison [*A*], 95 Dresden Row, Halifax, Nova Scotia, Canada. Hon. Secretary and Treasurer, C. A. E. Fowler, Capitol Theatre Building, Barrington Street, Halifax.

Province of Quebec Association of Architects. President, Maurice Payette, F.R.A.I.C., 6535 rue des Ecores, Montreal 36; P.Q., Canada. Hon. Secretary, Henri Mercier, 5276 Ave. Notre-Dame de Grâces, Montreal 28. Executive Secretary, J. P. Deschatelets, 620 Cathcart Street, Montreal.

Obituaries

Thomas Faulkner Shepheard [*F*,] former vice-president of the Liverpool Architectural Society, died on 28 March, aged 77.

Mr. Shepheard's early years were spent in Manchester, where he served his articles. In 1907, however, he started his own practice in Liverpool in partnership with Mr. E. L. Bower, and he continued to practise in that city throughout his life.

Mr. Shepheard's principal architectural works were the United Alkali offices in the Cunard building, Liverpool; the Montgomeryshire infirmary, Newtown (with Messrs. Grayson and Old); the Liberal Club, Widnes; two ship interiors for the Cunard Line, S.S. *Antonia* and S.S. *Andania;* the Bartlett home for epileptics, Maghull (the prize-winning design in a competition); some housing (Mather Avenue) in Liverpool; and the reconstruction of the old Blue-coat school, Liverpool.

Sir Patrick Abercrombie [*F*] writes:

'Thomas Faulkner Shepheard was one of those architects who enrich the profession: he was in the first place a good architect; not one who flashes across the architectural sky with spectacular success in competitions or much discussed work, but one who makes a steady and progressive contribution to the sum of English building. He was of real country farmer-owner stock who turned from his patriarchal occupation to the equally basic work of practical building, and thence by a natural transition to designing. Two great cities claimed him after his country experience in Northamptonshire and collegiate at Cambridge: thereafter it was Manchester and Liverpool; but he never ceased to be a countryman at heart. After working on the largest type of urban buildings in those two towns (including the whole of the stonework of that elaborate building, the Mersey Docks and Harbour Board Office, designed by Briggs, Wolstenholme, Hobbs and Arnold Thornely) he settled down to private practice with E. L. Bower [*A*] in that old Blue-coat school building in the centre of Liverpool, whose free, bold Georgian may be said to have given him his major stream of inspiration and whose rebuilding (after bomb damage) was the last and loving work undertaken by him and his devoted partner. Shepheard's health (bodily but in no way mentally) had by then almost confined him to his house.

'But to think of him only as a designer of buildings would be to miss what I mean by his enrichment of our profession—more particularly in his immediate surrounding of friends. Not only was he widely read and a thoughtful, if somewhat slow, talker on all artistic subjects, but he was a poet who could write a beautiful well-wrought sonnet, a charming water-colourist of the symbolist school, and a skilful worker in precious metals. In all directions his output was small, because so much thought was given to the conception and so much care to the execution. When it is added that he was a keen, but non-technical, appreciator of music, it will be realised how varied was his personality: but the variety—architecture, literature, painting, sculpture, music and craftsmanship (in execution and in appreciation)—was all harmonised by a warm and, in the Miltonic meaning, "sensuous and passionate" nature. Fortunate are the family and friends of such a man.'

William Naseby Adams [*F*] died on 16 July 1952 at the age of 65.

Professor Lionel B. Budden [*F*] writes the following appreciation:

'For those who knew Naseby Adams well it is difficult to realise that they will not see him again. He was so full of vitality, so essentially youthful in mind and spirit, that his death seems as sadly premature as it was sudden and unexpected.

'Liverpool was his "home town", and to it he remained attached all his life. He received his initial professional education in the Liverpool School of Architecture in the early days of the late Professor Sir Charles Reilly's direction of the school. Stimulated by Reilly and further encouraged by the award of a Studentship offered by the Liverpool Architectural Society, he soon showed that he possessed exceptional abilities. The characteristics which later distinguished his work in practice—vigour, boldness and decision—were evident in the designs that he prepared as a student. Direct planning appeared to come naturally to him, and from the outset he was endowed to a remarkable degree with practical building sense.

'In 1908, having taken the old Diploma course in the Liverpool School, he entered the office of Messrs. Briggs, Wolstenholme, Hobbs and Thornely, remaining there until, four years later, he went into partnership with Mr. Duncan Campbell. Before this partnership was in effect brought to an end by the first world war it had resulted in some pleasant additions being made to the domestic architecture of Merseyside.

'After the war, in which Adams served as an artillery officer in Egypt, Gallipoli and France and in the course of which he was wounded twice—the second time severely—he settled in London, where he sometimes combined and sometimes alternated the conduct of an independent practice with salaried appointments and free-lance 'ghosting'. An experience which supplied him with some of his best stories—and he had a richer store than most people—was his association with the late Sir Edwin Lutyens, for whom he worked as chief assistant on Britannic House.

'His ability to reduce the planning problems of a complex programme to the simplest terms and then to solve them so effectively that it was hard to think that they had ever presented any serious difficulties made him a formidable entrant in any competition in which he participated. Unfortunately, when he won it was usually in an anonymous capacity, for he was much employed by other architects with more means but less skill than he had in this field. In open association with another former student of the Liverpool School, Professor Eric Arthur of Toronto, he did, however, win the competition for the Dewsbury war memorial; and amongst other competitions which he entered under his own name and in which he secured either a second or third premium were those for municipal offices for Beckenham, a mental hospital at Ardee, Neath, Eire, and a new hospital for Surbiton. His contribution to the success of Messrs. Ashley and Winton Newman in winning the competition for the Birmingham technical school shortly before the second world war led to his joining this firm as a partner; a position that his independent temperament did not long allow him to retain.

'He was excited by and enjoyed working on

projects of a civic character, such as the Peterborough Town Hall and the Southampton Civic Centre, on both of which he was engaged as chief assistant by Mr. Berry Webber. It was, indeed, always his ambition to secure a commission of this kind himself and to show what he could make of it. If, however, no such opportunity ever came to him, he had the satisfaction of designing and carrying out in his own name some admirable houses in the Home Counties—notably one for Mr. and Mrs. Rudd at Gerrard's Cross and another for Lord Marley at Marley Edge, Haslemere.

'Elected as an Associate in 1918 and a Fellow in 1941, his interest in the affairs of the R.I.B.A. was real and constant. From 1934 to 1939 he served as an Associate Member of the Council and as a member of the Prizes and Scholarships Committee of the Board of Architectural Education. Other bodies of the Institute on which he also served for varying periods were the Competitions, Public Relations, Professional Conduct, and Practice Committees. On all of them and on the Council itself he would speak forcibly and freely, if he felt so disposed; and the fact that he was frequently in a minority of one is no way discouraged him.

'He was an individualist, original, eccentric and very lovable, and his friends will always remember him as he deserves to be remembered —with admiration and affection.'

William Sutherland Maxwell [*F*], past President of the Royal Architectural Institute of Canada and one of Canada's most distinguished architects, died in Montreal on 25 March. He was aged 78.

Mr. Maxwell, who was born in Montreal, was educated at the Montreal High School, at Tucker's School, and at the Ecole des Beaux Arts, Paris. He began his architectural career as draughtsman with his brother, Edward Maxwell, in 1890. He subsequently spent some years with a Boston firm, working on large office buildings and hotels, and later travelled and studied in France, Switzerland, Italy, England, Asia and Egypt. In 1902 he formed the partnership of Edward and W. S. Maxwell, and, on the death of Edward Maxwell in 1923, the partnership of Maxwell and Pitts.

Among his various buildings throughout Canada are the Parliament Buildings, Regina, Saskatchewan; several hospitals in Montreal and the Montreal High School; the Church of the Messiah, Montreal; the Palliser Hotel, Calgary; the Chateau Frontenac, Quebec; and a number of private residences.

Mr. J. Roxburgh Smith [*F*], Past President of the Royal Architectural Institute of Canada, writes of Mr. Maxwell as follows:

'Due to his long absence abroad in more recent years and his unfortunate illness upon returning home, he was perhaps not too well known by many members of the present generation. However, in spite of the lapse of time, there are still quite a few active members in the profession who were fortunate enough to come under his influence and who still appreciate the benefits derived from the association. To some, it has been a prized heritage which has proven its worth amid the ever changing tempo of our diversified age.

'His extensive travels and studies in France, Switzerland, Italy, England, Asia Minor and Egypt provided him with a broad outlook which was reflected in all his artistic efforts. His ceaseless activities in the draughting room were an inspiration, and his meticulous attention to detail a not-to-be-forgotten lesson. The effects of the latter can be clearly discerned by the discriminating observer in all his works.

'His great interest in the "Atelier Maxwell", connected with the Beaux-Arts Institute of Design in New York, of which he was the guiding spirit, should be recorded among his professional efforts, along with his enthusiastic activities in the creation of the Arts Club in Montreal. He was fortunate in the opportunities presented during his day—hotels, railway stations, Parliament buildings, schools, art galleries, office buildings, banks and numerous large houses for wealthy clients—all came to his hand and remain today as monuments to his outstanding abilities.

'He was a Past President of the Quebec Association of Architects; a Fellow and Past President of the Royal Architectural Institute of Canada; a Fellow of the Royal Institute of British Architects; Vice-President of the Royal Canadian Academy in 1938; and associated with many other Societies related to the arts.

'In his passing the profession loses a distinguished gentleman, and his country a talented son.'

John Ellis Stocks [*F*], past President of the West Yorkshire Society of Architects, died on 18 December 1951 at the age of 67. His partner, Mr. W. Alban Jones [*F*], writes the following personal recollection:

'John Ellis Stocks' interest in architecture was first aroused by visits as a youth to Weeton Vicarage, where the parson of that time, intensely proud of the church by Sir Gilbert Scott, imparted his enthusiasm to the young visitor, who ever afterwards maintained an admiration for Scott's work—a contentious matter on which we agreed to differ.

'We first met well over 50 years ago, as juniors in the Leeds office of William Bakewell [*F*], and both were subjected to a rigorous discipline, memories of which cemented our friendship—despite my having had to make him daily rub up Indian ink in a warmed saucer (the bottled variety being considered new fangled and not allowed in the office by Mr. Bakewell). Stocks left to gain first hand experience on buildings under Mr. Bruce, clerk of works to Alfred Waterhouse, R.A., on Lloyds Bank premises then being erected in Leeds. When this building was finished Stocks, with the courage of youth, boldly took an office therein and began practice in 1906 at an early age.

'Many villages in Wharfedale bear witness to small things well done by him at that time, including the village hall at Weeton and North Rigton Vicarage. He often said that one could avoid offensive design in Leeds by going down another street, but a single bad design or garish materials in the country could blight the whole grey Yorkshire landscape to which he was devoted.

'On his return from service in Africa after the 1914-18 war we began our partnership, and were soon immersed in housing work for various Councils, including Leeds, Rothwell and Tadcaster. The spate of Council house building abated, Stocks enjoyed the work of renovations and conversions at Harewood. These amounted in some cases practically to rebuilding and were carried out without any discord to the existing work in the village, done by Carr of York. Stocks was also entrusted with the lay-out and negotiations for the development of Wigton Moor Estate, where insistence by the late Earl of Harewood on architectural control over design and materials in the buildings has resulted in marked improvement to this residential outskirt of Leeds.

'As President of the West Yorkshire Society of Architects Stocks was nominated during the last war as principal architect for the Ministry of Works in the erection of a large emergency hospital at Nocton Hall, Lincolnshire. Working against time, this was completed by the appointed date for use by American troops. During this war he served in the Royal Observer Corps at Harewood.

'In collaboration with the late Dr. H. Thompson, Stocks wrote the history of St. John's Church, Leeds, to commemorate its 300th anniversary in 1934.

'His loss will be felt by a wide circle of friends, many of whom filled the little church at North Rigton to pay their last tribute to him.'

Harry Pover [*L*] died on 27 April, aged 75.

Mr. Pover, who lived all his life in Faversham, received his training in the office of his father, who was Borough Surveyor and Architect. He set up his own practice in 1903. Mr. Pover became architect to Faversham Education Committee, to the Managers of District Schools, and to the Trustees of Faversham United Charities.

His principal architectural works consisted of a Masonic Hall at Whitstable for Graystone Lodge, 'Cratloe', a private house at Faversham, co-operative stores at Faversham, Birchington and Broadstairs, and shops and motor showrooms at Margate.

Herbert John Wilson [*F*] died on 27 May. He was 67 years of age.

Mr. Wilson was a Peterborough man. After leaving school he was articled to a Peterborough architect, the late William Boyer, and after some experience gained in London and various provincial cities returned to his native town in 1910, to become a partner in the firm which his father, Allen Wilson, had founded two years earlier.

Mr. Wilson was responsible for a large number of buildings in Peterborough, including the CITIZEN AND ADVERTISER offices and the Brewster Avenue school. He was also one of the honorary architects for the Peterborough swimming pool. In addition, Mr. Wilson carried out work in the Bridlington (Yorks) area, Seaford (Sussex) and Cromer. He was a keen sportsman, playing football, cricket, hockey and tennis for Peterborough teams. He was also a chess player and a photographer. About 30 years ago he climbed the Matterhorn, accompanied only by a guide. A Freemason, Mr. Wilson was Past Master of the Dr. Oliver Lodge, and P.Z. of the Guildenburg Chapter, holding provincial rank in both degrees.

Hubert Arthur Hesketh [*L*] died on 17 June, aged 56.

Mr. G. Pierce Clingan, A.M.I.Struct.E., City Building Surveyor, Liverpool, whose deputy Mr. Hesketh was, writes of him as follows:

'He was born in Manchester of humble parentage on 8 August 1896. He attended elementary and secondary schools. His parents having moved from Manchester to Liverpool, he secured a junior clerical position with Messrs. Fogg, Wynn and Fogg, Architects Lord Street, Liverpool, and it was here that he received his first incentive to incline to the profession. For a short period he was employed in the office of Liverpool University, and was later appointed junior clerk in the office of the City Building Surveyor, Municipal Buildings, Dale Street, Liverpool, where he remained till the time of his death. He served overseas with H.M. Forces from 1915 to 1919.

'During his 40 years with the Liverpool Corporation he served in every office of the department, ultimately reaching the position of Deputy City Building Surveyor, and had this unfortunate tragedy not occurred assuredly he would have succeeded me on my retirement in January next.

'He was a man of extraordinary talents without possessing any distinctive scholastic qualifications. He was respected by all he came in contact with, mainly because of his undoubted kindness and understanding of the other

fellow's point of view. It is reasonable to say—and I speak with some authority—that few indeed knew so much about building law as did the deceased. The lame dog was always his friend, and in this connection he will be mourned by very many who owed him much for whatever successes in life they may have achieved.

'He was for many years one of the Board of Examiners for the office of Building Surveyor under Local Authorities, and had qualified to act as District Surveyor under the London County Council. He was also a lecturer in Building Science at our Liverpool Technical College, and during his years of instruction I know that very many young men under his tuition have more than made good in the profession.

'I think I might conclude by saying that his ambition in life was to see everything well done, and in this connection he himself was a great success.

'For my part, I have lost a good friend and a deputy who will be extremely difficult to replace. He will long be remembered as an example of what a public official should be.'

Stanley Vickerstaff Cherry [*A*] died on 19 October 1951, aged 62.

At the time of his death Mr. Cherry, who trained in the office of the late A. Marshall [*F*] of Nottingham, was Chief Architectural Assistant in the City Engineer's Department, Nottingham. The principal architectural works with which he was connected are Sneinton and Lenton Boulevard Libraries, the Central and Wholesale Markets, the Public Abattoir, and the Bar Lane, Manning, William Crane and Jesse Boot schools.

Albert Thomas Butler [*F*], past President of the Birmingham and Five Counties Architectural Association, died on 6 March at the age of 80.

Mr. Butler was articled to Messrs. Bailey MacConnell [*F*], of Walsall. He started in private practice in 1893 at Cradley Heath, Worcs., and removed to Dudley in 1910. He was responsible for the new Technical College, Dudley, the Station Hotel and the rebuilding of the Guest Hospital, for a new grammar school at Halesowen, and a large variety of other buildings typical of a busy provincial practice. Mr. Butler was President of the Birmingham and Five Counties Architectural Association from 1929 to 1931, and was also a member of the Worcestershire Council for the Preservation of Rural England and a Fellow of the Institute of Arbitrators.

Herbert Henry Reid [*F*] died on 21 March at the age of 57.

Mr. Reid had practised for many years in Ceylon, where his loss will be severely felt. He went there in 1925, after serving his articles for a year in Newcastle and then in Bolton with Messrs. Bradshaw Gass and Hope. In 1928 Mr. Reid took as his partner Mr. S. W. Edwards [*F*], and in 1947 Mr. J. C. Nilgiria [*A*]. Mr. Nilgiria now carries on the practice under the name of Edwards, Reid and Begg.

Chief among Mr. Reid's architectural works are the art gallery in Colombo, Kelaniya Temple, the clock tower, Badulla, and premises for Messrs. Aspinwall and Co., Cochin. He also designed proposed additions to Dalada Matigawa—the Temple of the Tooth.

Charles Evelyn Simmons [*F*] died 31 March, aged 73.

Little is known about Mr. Simmons' early life, but he started in private practice in about 1906, in partnership with the late Horace Field, in London. From 1914 to 1919 he was with the Ministry of Health, then again in private practice in Westminster until 1939, when he moved to Barnet.

Mr. Simmons designed the Roman Catholic Church at Gretna, a number of houses and flats in the London suburbs, one or two factories, a children's home and hospital at Hadley, extensions to the Victoria Cottage Hospital, Barnet, and new offices for Messrs. Tate and Lyle at Victoria Docks.

William John Taylor, A.M.I.Struct.E. [*F*], past President of the Inverness Architectural Association, died on 29 March, aged 59.

Mr. Taylor, who qualified at Robert Gordon's Technical College, Aberdeen, and also studied at Gray's School of Art, practised throughout his career in Inverness, beginning in 1921. Among his works were the Royal Burgh of Forres Housing Scheme 1923, a number of cinemas and Drumossie Hotel, Inverness. Mr. Taylor was for a period Honorary Sheriff-Substitute of Inverness, Elgin and Nairn.

John Towneley Sugden [*L*] died on 24 April, aged 72.

Mr. Sugden was articled first to Mr. J. F. Fogerty [*A*] of Bournemouth, then to Mr. J. Ely [*F*] of Manchester. After a period as assistant in various firms, he went to the Municipal Corporation of Ilford as architectural assistant.

Mr. Sugden was interested in heraldry, illuminating and black-letter writing.

Peter Bramley Taylor [*A*] died on 18 May at the early age of 44.

Mr. Bramley qualified at Leeds School of Architecture, but worked throughout his unhappily brief career in London. At different periods, interrupted by five years' service in the army from 1941 to 1946, he was assistant to Mr. Robert Atkinson [*F*], Mr. Louis de Soissons [*F*], Mr. A. F. Hunt [*L*], Messrs. Welch and Lander [*FF*] and George Hubbard and Son [*FF*].

Adam Knowles Stewart, A.M.I. Struct. E. [*A*], died on 28 October 1951, aged 60.

Mr. Stewart combined training in the offices of Messrs. Young and Mackenzie, Belfast, with classes at Belfast College of Technology. During this time he twice won the Lanyon Memorial Prize for architectural drawings.

He remained with Messrs. Young and Mackenzie until 1914, when he joined up and was commissioned in the R.E.s, serving with distinction in France and Italy. On demobilisation he was for a short time with the Glasgow branch of Messrs. Harland and Wolff, then returned to Ireland, having been appointed to the staff of the Office of Public Works in Dublin. Later he transferred to the Works Division of the Northern Ireland Ministry of Finance.

Edward Harold Forster [*L*] died on 9 April. He was 67 years of age.

Mr. Forster was articled to a Hull architect, started in personal practice in 1907 and practised throughout his life in Thorne, near Doncaster. A large number of the substantial houses in the locality are his work, as are some in Bawtry and Horbury, and he also carried out work of various kinds for Thorne R.D.C.

John Glendinning [*L*] died on 20 April, aged 50.

Mr. Glendinning was educated at Kelty in Fife, articled to a Dunfermline firm, and after some years of working as an assistant was appointed resident architect to the Kinlochleven Village Improvement Society, Fort William, Inverness-shire, in 1937. In 1939 he entered the civil service as a draughtsman in the Scottish Home Department under the late R. Reid Mill, M.B.E. [*L*], whose obituary appeared in the August JOURNAL. The Scottish Home Department's technical staff were subsequently centralised under the Chief Architect of the Department of Health for Scotland. Mr. Glendinning was employed mainly on extensions and alterations to Scottish prisons and Borstal institutions.

Henry Ernest Flinn [*L*] died on 14 April, aged 71.

Mr. Flinn was articled in Liverpool to Mr. T. T. Reece, and practised in Birkenhead, from 24 Hamilton Square, from 1912 to 1915, when he joined the Artists' Rifles. He served throughout the first world war, receiving a commission in the Connaught Rangers. From 1918 to 1926 he was with the War Graves Commission in France, and with Messrs. Petch and Fermaud [*F*] from 1927 to 1930, when he returned to private practice in Birkenhead.

From 1940 to 1945 Mr. Flinn was with the Municipal Corporation of Edmonton, and afterwards until his death with the War Damage Commission as Assessor.

Mr. Flinn's principal architectural works are the Church of Christ the King at Bromborough, Cheshire, and the Presbytery of the Church of St. Catherine and Martina, Hoylake. While with Messrs. Petch and Fermaud he designed a number of public houses.

Mr. Flinn was an accomplished water-colour artist, and his paintings were shown at a number of exhibitions.

John Wilford Hilbert Farrow [*F*] died on 20 April, aged 74.

Mr. Farrow worked throughout his life in East London, South Africa. After the first world war he built a number of war memorials, including that at King William's Town. He had a general practice embracing all types of buildings, but with schools, hospitals and ecclesiastical works figuring prominently among them. His practice—Farrow, Stocks and Farrow—is carried on by his partners, Mr. John Wilford Farrow [*A*] and Mr. Sidney Evan Smale [*A*].

George Edric Neel, A.M.T.P.I., M.S.I.A. [*F*], died on 8 April. He was only 38 years of age.

Mr. Neel read architecture at Cambridge, and took a First. He was awarded the Prior Prize.

From 1935-37 he was with Wells-Coates, Jaqueline Tyrwhitt and Associates [*F*], and from 1937-39 in partnership with Mr. Denys Lasdun and Mr. Patrick Gwynne. In 1939 he joined the architectural staff of the Cement and Concrete Association, and was lent by them to the City of Coventry in connection with its housing projects for six months during the early part of the war. In 1943 Mr. Neel, together with Mr. Raglan Squire [*F*] and Mr. Rodney Thomas [*A*], founded Arcon. Mr. Arthur Middleton Gear [*A*] joined the partnership in 1946, and in 1951 Mr. Squire left it to set up on his own account.

Mr. Neel's contribution to architecture cannot be accurately assessed in terms of buildings only, since he occupied himself chiefly with research into the problems of prefabrication. It is only possible to list a number of the structures to which he made valuable contribution. They include the Arcon Mark V temporary house; a number of structures for particular use in the tropics, including houses, hospitals, factories, storage buildings, etc.; prefabricated timber houses for the Overseas Food Corporation; and a special prefabricated house for export to Australia.

At the time of his tragically early death Mr. Neel was working on a book on prefabrication.

Frederick Charles Cowderoy-Dale [*F*] died in Dallas, Texas, where he had made his home, on 17 October 1951. He was aged 59.

Mr. Cowderoy-Dale's childhood was spent in Hastings. He studied at art schools in Hastings and London, and in 1917 went to America, to study architecture at the University of Minnesota. In 1919 he returned to England and enrolled in the Architectural Association School of Architecture. After completing his course there he divided his time between the U.S.A. and this country. For two or three years immediately preceding the war he was in America, but returned to England and served throughout the war in the Ministry of Works. In 1946 he returned again to America, to Dallas, Texas, and intended to become an American citizen.

Mr. Cowderoy-Dale built the Medical Arts and the Santa Fé buildings, Dallas, in the 'twenties. He was also responsible for several other industrial and commercial buildings there, and for some interesting private houses.

Sidney Cecil Hurst, A.R.I.C.S. (*L*), died on 26 December 1951, aged 54.

Mr. Hurst, on leaving Brighton Grammar School in 1915, at once volunteered and throughout the first world war served with the Northumberland Fusiliers (now the Royal Northumberland Fusiliers). In 1919 he became architectural and survey assistant to the Imperial War Graves Commission, working under Sir Edwin Lutyens, Sir Herbert Baker, Sir Reginald Blomfield and Dr. Charles Holden [*F*]. In 1930 he joined the Ministry of Works as architectural assistant. From 1936-38 he was seconded to be resident architect to Sir Edwin Lutyens for the construction of the Australian war memorial at Villers-Bretonneux, Pas de Calais, and from 1939-45 he was seconded to the War Office as Staff Officer, Claims and Hirings Directorate. He served in France, England, Iceland, Holland and Germany, and was mentioned in despatches for distinguished service with the B.L.A. in north-west Europe. He was demobilised with the rank of Major.

In 1945 Mr. Hurst returned to the Ministry of Works and worked on the Atomic Research Station. Subsequently he joined the Diplomatic and Consular Section and worked on embassies and consular buildings for South America, North Africa and the Middle East.

He also conducted a small private practice, and designed some 20 or 30 private houses for the East Dean Estate, near Brighton.

Mr. Hurst was the author of *The Silent Cities*—an illustrated guide to the war cemeteries and memorials to the missing in France and Flanders, 1914-18.

Leonard Charles Symes [*A*] was unhappily killed in an accident on 9 February last. He was 42 years of age.

Mr. Symes had made his home in South Africa since 1938. He was born and educated in England, and after leaving school entered a firm of structural engineers, at the same time attending the Northern Polytechnic School of Architecture.

He subsequently worked for several firms of architects, then had his own practice in London for a time before emigrating. In South Africa Mr. Symes worked for two firms of architects before joining the Natal Provincial Administration, where he held the position of Assistant Architect. In 1944 he joined the firm of Corrigall, Crickmay and Partners as a partner, and was first with their Pietermaritzburg branch, later in Port Elizabeth.

Mr. Symes was closely associated with large additions to the Natal University College, Pietermaritzburg branch, also with the provision of homes for ex-servicemen and aged couples. Other works under his direction were a new factory for Messrs. African Oxygen and Acetylene (Pty.) Ltd., a large new office building for Messrs. Sanlam, and a large proportion of school work for the Provincial Administration.

Mr. Symes was a keen Freemason, a member of the Goodwill Lodge of Port Elizabeth.

Members' Column

This column is reserved for notices of changes of address, partnership and partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

APPOINTMENTS

Mr. S. N. Economou [*A*] has taken up an appointment as the Municipal Engineer-Architect of Famagusta, Cyprus, and would be pleased to receive any communications and trade catalogues at this address.

Mr. Alex Steele [*A*] has been appointed Senior Deputy City Architect of Edinburgh, and his address is City Architect's Department, City Chambers, Edinburgh, 1.

Mr. R. F. G. Vaughan [*L*] has been appointed Architect to Messrs. Arnold and Hancock Ltd., The Brewery, Wiveliscombe, Somerset, where he will be pleased to receive trade catalogues, etc.

PRACTICES AND PARTNERSHIPS

The name of the firm of **Messrs. Fowler and Grove (Mr. J. S. Fowler** [*A*] and **Mr. E. A. Grove** [*A*]) has been changed to **Fowler, Grove and Haggar. Mr. A. A. Haggar,** M.B.E. [*A*], has been a partner of the firm for some years. The telephone number has also been changed to Southampton 5258, and the firm will practise from 140 Lodge Road, Southampton.

Following the death of **Mr. George Alexander Sexton** [*L*], senior partner in the firm of **G. A. Sexton and Son, Mr. G. W. F. Sexton** [*L*] is continuing the practice in the style of **G. A. Sexton and Son.**

Mr. Donald Stewart [*A*] and **Mr. Stephen Garrett** [*A*] have entered into partnership at 109 Gt. Russell Street, W.C.1 (MUSeum 9493), and will be pleased to receive trade catalogues, etc.

CHANGES OF ADDRESS

Mr. W. H. Groves, A.M.T.P.I. [*A*], has been awarded a visiting Research Fellowship at Massachusetts Institute of Technology, Cambridge, U.S.A., where he will carry out a year's research in housing and redevelopment, with especial reference to mobility and the underdeveloped countries. Manufacturers of constructional materials and equipment and fittings related to this research are asked to direct literature to him at the above address.

Mr. David Ling [*A*] has changed his address to c/o Mr. L. C. Gunby, Manager, Central Mortgage and Housing Corporation, Central Products Buildings, 343 Richmond Street, P.O. Box 940, London, Ontario, Canada.

Mr. G. P. Nodes [*A*] has removed to 5 Park Crescent, Worthing, Sussex, where he would be pleased to receive trade catalogues, etc.

Mr. C. H. Bingham Powell [*A*] has removed to 16 Gloucester Place, Portman Square, W.1 (WELbeck 7251).

The new address of **Mr. Herbert R. Wade** [*A*] is c/o Messrs. Jones and McWilliams, P.O. Box 268, Port Elizabeth, Cape Province, S. Africa.

Mr. W. A. Eden [*F*] has removed to 23 East Common, Harpenden, Herts.

PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Fellow requires a partnership in Northumberland, Cumberland, Durham or North Riding. Considerable knowledge of town planning and surveying in relation to valuation and experience in all sections of the profession. Box 62, c/o Secretary, R.I.B.A.

Associate (41) with varied and good experience at home and abroad desires partnership. Some capital available if required. Box 65, c/o Secretary, R.I.B.A.

Fellow would like to hear from practising firm with a view to partnership or position leading thereto either in the United Kingdom or within the British Commonwealth. Box 66, c/o Secretary, R.I.B.A.

ACCOMMODATION

Member has small office to let in Catherine Place, Buckingham Gate, S.W.1, available from 1 October 1952. Private telephone. Rental £2 per week inclusive of heat, light and cleaning services. Box 67, c/o Secretary, R.I.B.A.

MISCELLANEOUS

Mr. David Stern, A.A.Dipl. [*A*], wishes it to be known that he is not the architect who bears the same surname as himself, who was plaintiff in a recent law case which was reported in the national press and the JOURNAL.

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